AMERICAN GAS ASSOCIATION MONTHLY

February 1927

Volume IX Number 2

Building Good-Will By Customer Contacts
By H. T. EAST

Repairs of Leaks in Sectional Holders
By J. H. BRAINE

The Gas Industry and Standardization
By ALEXANDER B. MACBETH

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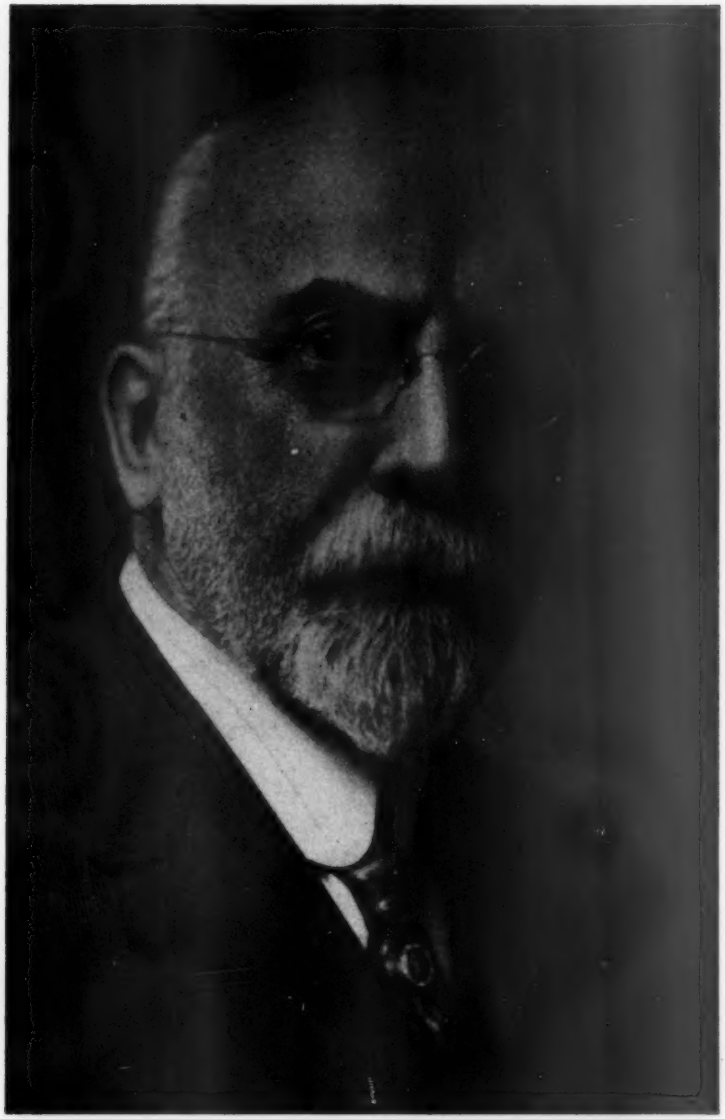
Our Own Who's Who



XXI
George G. Ramsdell

BORN Providence, R. I., April 30 1848. Completed course, Vincennes University, 1863. Undertook to organize a company to heat Vincennes from a central plant. Officials of Citizens Gas Company became interested in project resulting in his appointment as manager and treasurer, in 1877. Held this position until 1890 when he became general manager of American Gas Company, Philadelphia. In 1905 became president of Ramsdell Inverted Gas Lamp Company. In 1911 was elected secretary and treasurer of American Gas Institute. In 1880 imported 17 h.p. gas engine, the first large gas engine to be brought into this country. About 1893 successfully used the first rubber-sealed 16-foot purifying box cover. Has been member headquarters staff of the A. G. A. since its formation. President, Western Gas Association, 1889; president, American Gas Light Association, 1899; honorary member of Ohio and French associations; secretary, Society of Gas Lighting since 1904.

In 1900 attended International Gas Congress at Paris.

AMERICAN GAS ASSOCIATION MONTHLY

Vol. IX FEBRUARY, 1927 No. 2

The Gas Industry and Standardization

Simplification Theme of Secretary of Commerce Hoover Has Many Virtues as Proved by Our Business

By ALEXANDER B. MACBETH

President, American Gas Association

A. B. Macbeth

FROM its inception, more than a century and a quarter ago, the manufactured gas industry has functioned, in all its activities, according to specifications or standards. The larger number of these were originally self-imposed and were later incorporated into the requirements of regulatory bodies as the latter were organized. Instruments of precision and their exact operation have been known and used by generations of gas operators, and include, among others, the wet and dry meters, photometers and calorimeters. These appliances are calibrated by standards and master standards, the accuracy of which has been certified by the ~~U. S.~~ National Bureau of Standards.

As time went on the gas industry developed standards of quantity and quality for control not only of manufacture and distribution but in the interests of the ultimate consumer of gas which includes the family as well as the manufacturer and commercial user.

The most recent and striking example of standards, particularly as it affects the domestic customer, is the American Gas Association Testing Laboratory. Gas burning appliances for the home are tested and certified as to their safety and economy. In addition to performance, structural details and design are inquired into, and each piece of equipment must comply with rigid specifications prepared by committees composed of representative bodies. The U. S. Bureaus of Standards and Mines and the U. S. Public Health Service take a very active and valuable part in the Laboratory control as well as the development of research methods. This includes special and original equipment for testing purposes.

Another outstanding development is the American Gas Safety Code sponsored by the U. S. Bureau of Standards and by the American Gas Association. This covers the gas installations in buildings and promulgates a code which it is hoped will go far toward securing uniformity. It will also be a valuable guide to architects and builders as well as federal and municipal bodies and at the same time serve the interests of the user of gas.

Active participation was taken on the part of the gas industry in connection

with the undertaking by the U. S. Department of Commerce for the standardization of boilers used for storing heated water, largely for domestic purposes. Gas-fired water heaters are extensively used in connection with these tanks, and the standards developed and agreed upon at the conference between government representatives, the plumber trade and the manufacturers, as well as the gas industry have been adopted by the latter.

Much has also been done by the gas industry in connection with resuscitation methods, involving highly technical and medical research work. A standard method of procedure for use in emergency cases has been worked out, and demonstrated to be of great value in life saving. Here again a valuable contribution has been the final reduction to a uniform, simple, and standard practice through the cooperation of the U. S. Public Health Service.

In the interests of standardization and uniformity, specifications for cast iron pipe and fittings, gas ranges, and gas tubing have been prepared by representative members of the gas industry. These requirements and specifications are recognized as standard by operators, users, and purchasing agents. Other specifications, definitions and the like are in the course of preparation and will shortly be available for water heaters, space heaters, etc.

New York Places Embargo on Tubing

DR. Louis I. Harris, Health Commissioner of New York, N. Y., has announced he has placed an embargo on 110,000 feet of gas tubing of inferior quality found in the store room of a large gas supply company in order to prevent possible deaths from gas poisoning.

Officials of the company, he said, made overtures to have the tubing released and promised to ship it into other localities. Dr. Harris declared he regretted he had no power to destroy it, but said he intended to notify health authorities of New Jersey, Connecticut, Pennsylvania and New York State that the tubing, restricted from sale under Section 344 of the Sanitary Code of New York, was being turned back to the manufacturers.

GAS SALES REACH NEW HIGH

WITH the largest annual increase in manufactured gas sales ever recorded, the year 1926 was the best in the history of the gas industry. Total sales for the year, officially reported by the American Gas Association amounted to 459,326,000,000 cubic feet, an increase of practically 38 billion cubic feet over 1925, and an increase of 152 billion cubic feet or 40 per cent in the past five years.

The increase in 1926 sales, which brings the total to a new high record, is more than twice the increase shown in 1925 over 1924, and is almost as large as the combined increases shown in the three years 1920, 1921, and 1922.

The expansion of distribution facilities last year enabled the 984 gas companies to extend their service to 400,000 new customers, an increase of nearly four per cent in the number of customers, bringing the total to 11,000,000. With the extension of distribution mains, there has been a parallel growth in plant and manufacturing processes, and also a decided increase in operating efficiencies.

The domestic business has shown a normal increase, and the industrial and house heating uses the most phenomenal growth on record. A half million dollar research fund is being used by the American Gas Association to develop the industrial and factory heating business, with the result that equipment and furnaces are being designed that far outstrip any developed in the past. The coal strike during the first part of 1925 was a decided incentive to gas house heating, and this use for gas has grown rapidly in the year.

Gross revenue from the sale of gas increased $39,776,000 in 1926, to a new high total of $491,776,000. The sale of by-products of gas manufacture has shown more than a normal growth.

Coincident with the report of the increased gas sales in 1926 is the announcement that the American Gas Association has employed a market analyst to make a national consumer survey of the gas industry's market. The survey will include representative towns and cities in all parts of the country, and from the results the Association will decide what merchandising steps will be taken to insure the industry of a healthy growth in every branch of gas utilization.

PAULINE DUNSTAN BELDON, who has lectured before The Peoples Gas Light & Coke Co. of Chicago, has talked to the employees of The Brooklyn Union Gas Company. Her last two lectures have been on personality, and have been of great benefit to the personnel of the company. There are 150 close students of pyschology and personality in her class.

Annual Sales Break All Records

Biggest Increase of All Times Sends Total to New High; National Publicity Secured

AS mentioned on page 68, the sales of manufactured gas for 1926 show the largest increase on record and establish a new high. The newspapers of the country carried the story of the sales figures, with heads and captions that left no doubt as to the progress made by the industry in the past year.

By utilizing every means known for the dissemination of news, the Association was able to secure national distribution for the facts and figures. The press associations carried wire releases. Special dispatches were sent to newspapers and magazines, with the result that the story secured even wider distribution than those released at the time of the annual convention in October.

The statistical story is of the utmost significance to all gas companies, not only because it is a legitimate means for securing publicity, but also because it demonstrates what can be done when the Association has available authoritative and vital statistics.

At present the A. G. A. is working out a plan for the development of statistical work, and in this effort it has secured the earnest co-operation of most member companies. It is only through the publication of statistics that are authoritative that the manufactured gas industry can tell its story of progress to the American public.

MANUFACTURED GAS SALES BREAK RECORD

Increase in 1926 Largest Ever Recorded.

The largest annual increase in manufactured gas sales ever recorded marked the year 1926, which was also the best in the history of the industry. Total sales for the year, officially reported by the American Gas Association, amounted to 459,326,000,000 cubic feet, an increase of practically 38,000,000,000 feet over 1925 and an increase of 40 per cent. in five years. Total revenue of $491,776,000,000 is the highest on record and was received from 11,400,000 customers, an increase of 400,000.

1926 Gas Sales Reach Peak of $491,776,000

NEW YORK, Jan. 11.—With the largest annual increase in manufactured gas sales ever recorded, the year 1926 was the best in the history of the gas industry. Total sales for the year, officially reported by the

GAS INDUSTRY & MAKES RECORD

Increase Last Year Twice As Great As Gain In 1925 Over 1924.

NEW YORK, Jan. 11.—(U. P.)—With the largest annual increase in manufactured gas sales ever recorded, the year 1926 was the best in the history of the gas industry. Total sales for the year, officially reported by the American Gas Association, amounted to 459,326,000,000 cubic feet, an increase of practically 38,000,000,000 cubic feet over 1925 and an increase of 40 per cent. in five years. Total revenue of $491,776,000,000 is the highest on record and was received from 11,400,000 customers, an increase of 400,000.

Past Year Best in History of the Manufactured Gas Industry

New York, Jan. 18.—(Special)—With the largest annual increase in manufactured gas sales ever recorded, the best in the history of the gas industry, with total sales of 459,326,000,000 cubic feet of manufactured gas, it was reported today by the American Gas Association. This is an increase of 38,000,000,000 cubic feet over 1925 and an increase of 40 per cent in five years. Total revenue of $491,776,000,000 the highest on record was received from 11,400,000 customers, an increase of 400,000.

ture has shown more than a normal growth.

Coincident with the report of the increased gas sales in pronouncement that the

GAS INDUSTRY HAS MOST ACTIVE YEAR

New York, Jan. 10. (AP)—The year 1926 was the best in the history of the gas industry, with total sales of 459,326,000,000 cubic feet of manufactured gas, it was reported today by the American Gas Association. This is an increase of 38,000,000,000 cubic feet over 1925 and an increase of 40 per cent in five years. Total revenue of $491,776,000,000 the highest on record was received from 11,400,000 customers, an increase of 400,000.

MANUFACTURED GAS SALES SET RECORD

38 Billion Feet Increase for 1926 Is Greatest Gain Ever Made in Year.

With the largest annual increase manufactured gas sales ever recorded, the year 1926 was the best in history of the gas industry. Total sales for the year, officially reported by the American Gas Association.

Greatest Year In Gas History

By Associated Press

NEW YORK, Jan. 10.—The year 1926 was the best in the history of the gas industry, with total sales of 459,326,000,000 cubic feet of manufactured gas, it was reported today by the American Gas Association. This is an increase of 38,000,000,000 cubic feet over 1925 and an increase of 40 per cent. in five years. Total revenue of $491,776,000,000, the highest on record, was received from

Newspaper cuttings of the annual sales story which show the national circulation given to the record-breaking figures

Nagai Kenkichi, of the Toho Gas Co., Nagoya, Japan, sends these photographs of an exhibit of appliances by his company at a recent sanitary exposition. The exhibit, arranged to excite interest in making Nagoya a smokeless city, consisted of displays of house heating furnaces, water heaters, industrial furnaces for brass melting, brazing, etc., a bake oven for Japanese cake, space heaters, and a "foreign style" kitchen. Mr. Kenkichi, who was a most welcome visitor at A. G. A. Headquarters recently, reports that his company's sales are increasing. About 27 per cent of the output is industrial

Repairs of Leaks in Sectional Gas Holders

Detailed Explanation of the Method of Procedure to Be Used in Repairing Various Kinds of Leaks

By J. H. BRAINE
Superintendent, Holder Distribution Dept., The Brooklyn Union Gas Co., Brooklyn, N. Y.

REPAIRING of leaks in the lifts or sections of gas holders may be roughly classified as follows: 1. caulking; 2. small leaks or pin holes which can be readily repaired by the use of a single bolt; 3. larger leaks or cracks which require the use of a patch or plate; 4. defective plates or leaks of such magnitude that an entire plate or major portion thereof requires replacing.

EDITOR'S NOTE

TO our knowledge this is the first article ever to be published on the repairing of leaks in sectional gas holders. The author has described the various methods, and, generally speaking, covered ordinary repair work by his notes. There are other methods, as the author points out, but because of space limitations it was not possible to give them consideration in this discussion of standard practice.

Because this article will undoubtedly be of great interest to most gas engineers, THE MONTHLY has made arrangements to supply reprints. Instructions regarding orders for reprints are given elsewhere in this issue.

CAULKING RIVETS OR SEAMS

A great many small leaks will be found to occur on seams and rivets which can be repaired readily by a skilled caulker without replacing the rivets or applying a patch as described hereafter.

In caulking the rivets, the edge of the rivet is simply drawn down by a caulking tool until a tight joint is secured with the plate.

If the rivet cannot be made tight in this manner, it will have to be replaced with a bolt by one of the methods described later on.

The method of caulking a leaking seam is shown in Figure 2, the edge of the plate being cut back to a slight bevel and the lower edge being drawn down until a tight joint is secured.

In the case of new holders this is generally done with a pneumatic caulking tool, but it will be generally found that a hand tool used by a skilled worker will give more satisfactory results on repair work, as there is considerable danger of opening up further an already leaking seam by the use of pneumatic tools.

SMALL LEAKS OR PIN HOLES

Any one of the bolts shown in Figures 3 to 7 inclusive may be used for this kind of repair.

Figures 3 and 7 could be described as toggle bolts and their method of use is as follows:

The hole is first drilled out to the required size, this being determined by the extent of the pitting or corrosion.

The toggle bolt is then inserted, after setting the toggle in a position parallel to the long axis of the bolt.

After the toggle clears the hole in the plate it takes a position at right angles to the long axis of the bolt by reason of its unbalanced weight with reference to the pin connection, thus furnishing a grip against which the nut may be tightened and the grommet forced down to stop the flow of gas.

These grommets are usually made of lamp wick well saturated with red lead and linseed oil.

After the nuts are made up firmly, the bolt may be sawed off close to the nut.

The principal objection to this form of bolt is that it depends for its strength upon the shearing value of the pin connection and is liable to be a source of trouble in the hands of any but skilled workers.

The bolt shown in Figure 4 is formed, as the illustration indicates, by cutting

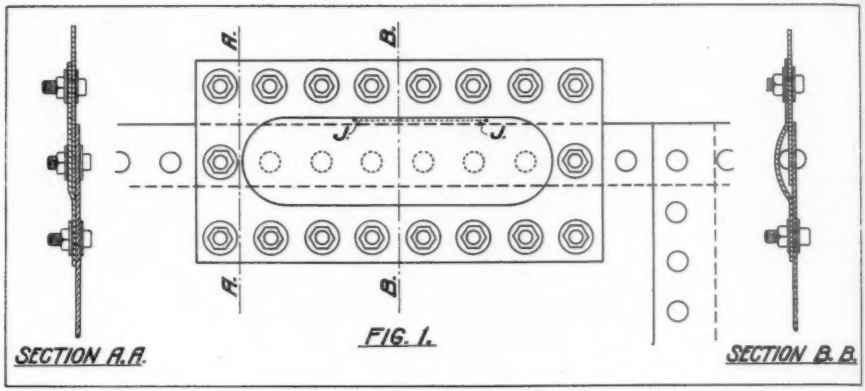


Figure 1

long threads on a round iron rod, sawing the rod longitudinally, and bending up the ends to form a grip.

When applied, the straight ends are separated at a sufficiently wide angle to allow the short ends to enter the hole in the plate, after which the grommet is applied and the washer and nut run down and tightened and the bolt sawed off close to the nut.

This bolt has the same objection, in a lesser degree, mentioned in connection with Figures 3 and 7 in that too much strain in tightening down the nut will break or straighten the bent ends and is only useful in skilled hands.

The bolt shown in Figure 5 is formed by flattening the head of an ordinary carriage bolt. It has an advantage over the bolts shown in Figures 3, 4 and 7 in that the full strength of the bolt is retained and it may be tightened without danger of breaking.

In applying this bolt, after the bolt is inserted in the hole, a small washer is run down over the threads to fill the hole in the plate partially and also to center the bolt, after which the lead and iron washers are installed and the nut run down as in the previous cases.

A grommet of lamp wick and red lead may be used in place of the lead washer if desired.

This form of bolt is used frequently in stopping holes in holder plating where samples of metal have been taken in order to ascertain the condition of the inner surfaces of the plates and may be applied by any iron worker.

Figure 6 illustrates what is probably the most common form of holder repair bolt.

It consists of a standard machine bolt, the end of which has been slotted with a hack saw and a soft iron or copper wire inserted in the slot. The slot is then peined together to retain the wire, after which the wire is straightened out and twisted as shown.

The method of installing this bolt is known as "stringing" and the procedure is as follows:

The holder must be at its maximum height with the bottom of the outer section just sealed in the tank water.

A hole of the desired size is drilled in the sheet undergoing repairs and a weight, attached to a light line, pushed through the hole and lowered by means of the line until the line can be reached by a wire hook inserted under the bottom curb of the outer section.

The line is then drawn out, the weight removed, and the bolt attached by means of the wire with the inside grommet and washer in place.

The bolt is then pulled up by the workman above and drawn through the hole. The grommet, washer and nut are run down over the wire after the line is detached and the wire used to hold the bolt snugly in place until the nut clears the end of the bolt sufficiently for a wrench or pliers to hold it against turning while the nut is tightened. The wire is then broken off and the above procedure followed out for the next bolt.

It is obvious, of course, that this method can only be used on the side plates of the sections or on the outer crown sheets.

Any of the bolts shown in Figures 3 to 7 inclusive may be used in applying patches as well as in repairing small holes.

It is possible, when the metal is of sufficient thickness, to use tap bolts for repairing leaking seams or replacing leaking rivets under certain circumstances.

This method has not been found very satisfactory, however, and it should not be attempted except by a skilled boiler maker.

When using a tap bolt, it is necessary to drill a hole in the outer sheet of the two which it is desired to join, somewhat larger than the hole in the inner sheet.

The hole in the inner sheet only should be tapped, thus allowing the tap bolt to draw the two sheets together when tightened.

Generally speaking, the use of some form of bolt as outlined above will be found more satisfactory than tap bolts.

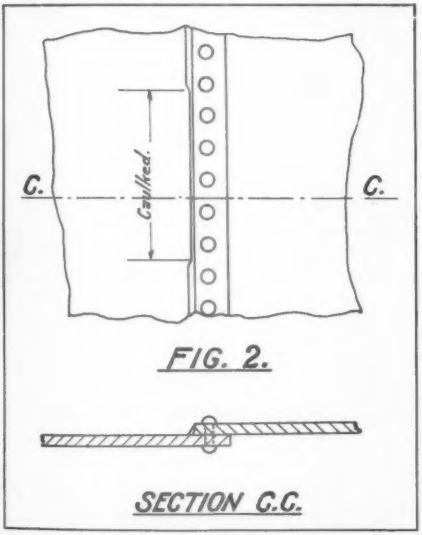


Figure 2

LARGER LEAKS OR CRACKS

In the case of holes too large to repair with a single bolt or where a great number of small holes are found in a limited area, or in places where a sheet is cracked, and where the deterioration occurs in the center of a sheet or far enough from a seam so that existing rivets do not have to be disturbed, a flat patch applied over a heavy pad of red lead putty may be applied and secured by any of the means described in the first part of the article under "Caulking Rivets or Seams."

Where the leaks or cracks occur adjacent to a seam or line of rivets, a patch similar to that shown in Figure 1 may be applied. (Crack shown as J. J.)

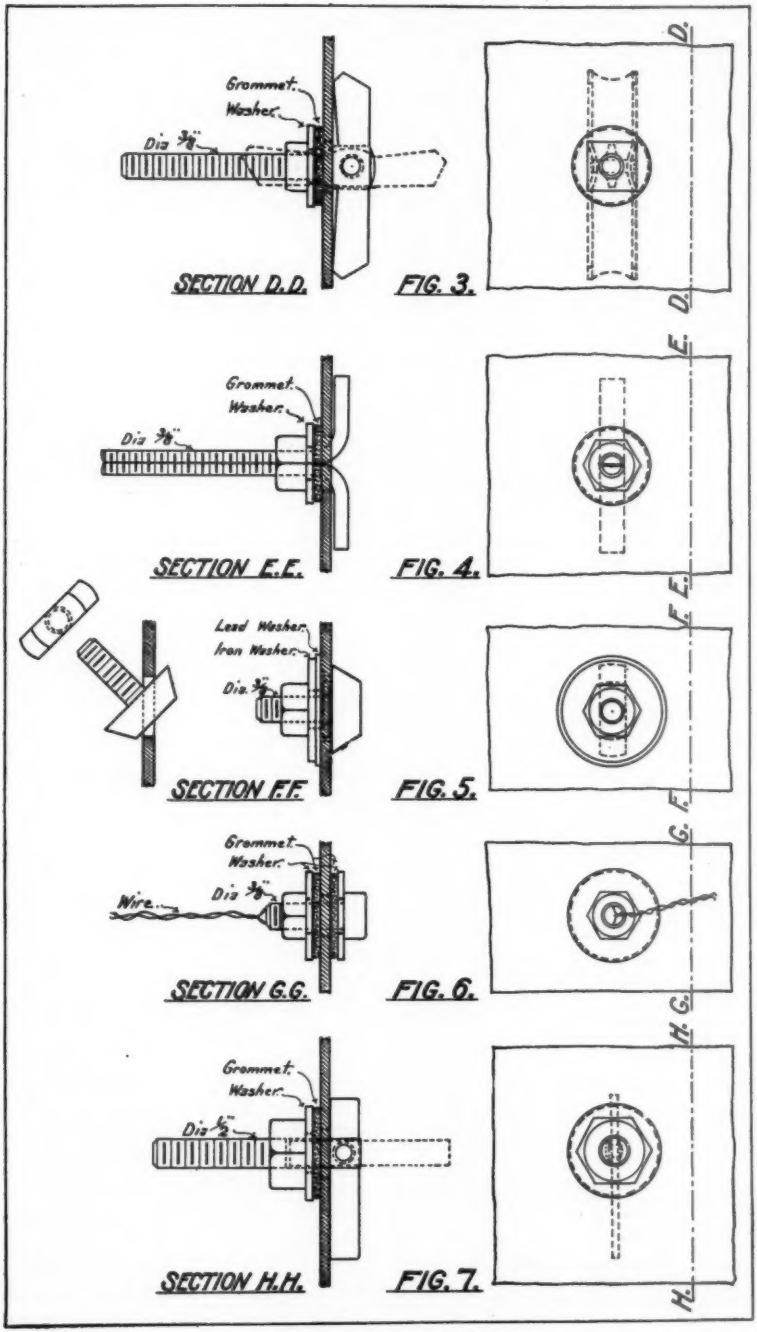
In this case the replacing of a considerable number of rivets with bolts may be avoided by "upsetting" the plate as shown.

This can be done in the majority of cases with a cold plate by an experienced boiler maker or holder repair man and will be found to be a very satisfactory and permanent repair.

In preparing for the application of a patch plate, it will be found convenient to drill the holes in the patch plate first and to use this as a template from which to drill the holes in the defective plate, thus avoiding any difficulty in matching up the holes when the work is started.

In all cases of repair work where a crack is to be dealt with, a hole should be drilled at each end of the crack to prevent its extending further at any future time.

In cases of leaks of such magnitude that the escaping gas makes work thereon difficult, if not impossible, a method has



Figures 3, 4, 5, 6, and 7

been sometimes used to stop the flow of gas, Figure 8, as follows:

While the holder is kept sufficiently low so that the gas is sealed off at "C," two rivets are removed above "C," one to the right and one to the left, as indicated at "A" and "B."

Sinkers with 3/16" flexible wire cable attached are now pushed through the rivet holes, and the lower ends are fished out from under the bottom of the shell, the upper ends being fastened outside the holder shell. If it is necessary to raise the holder in order to secure the lower ends of the cables, this may be done, the repairmen in the meantime keeping away from the leaking gas.

The two ends of the cable passing under the bottom of the shell are now attached to the two ends of a rod laced across the end of a strip of canvas, and two additional pieces of cable are attached to the two ends of a second rod laced across the other end of the canvas strip.

The cable passing through the rivet holes at "A" and "B" is now carefully drawn back, thus pulling the strip of canvas down under the water and up on the inside of the shell until it covers the hole, the two cables attached to the lower end of the canvas being paid out as required. The pressure of the gas inside the shell keeps the canvas tightly against the shell thus preventing the gas from escaping through the tear.

The metal patch is now placed on the outside using a couple of tap bolts to hold it in position until the bolts are fished through in the usual way. (See Figure 6.)

The canvas strip is then removed by the lower pair of cables and the rivets at "A" and "B" replaced with bolts by stringing them under the shell of the holder.

REPLACING DEFECTIVE PLATES OR PORTIONS THEREOF

A badly torn or corroded plate or portion thereof may be replaced in any section of a holder except the first or inner section when, for any reason, it is not possible or desirable to land the holder and purge the crown, by the following method:

For purposes of illustration, we will assume that a sheet requires renewing in the third section of a five section holder.

The second, third, fourth, and fifth sections are landed and the grip of the third section is made fast to the grip of the second section by means of suitable shackles.

The holder is then raised, the second and third sections rising together until the defective sheet is in a suitable position to work upon.

It will now be seen that the lower curbs of both the second and third sections are sealed in the tank water leaving an annular space between them to which air has free access from above.

This annular space will be found to clear itself quickly of gas, especially if a plate or plates are removed.

Repairs may now be made to any of the sheets of the third section to an extent which will not impair stability or put a strain upon good sheets beyond their tensile strength or the shearing value of the rivets.

An operation of this nature should not be undertaken by any but the most experienced workmen under competent supervision, but will in many cases obviate the delay and expense of purging operations, and will allow the holder to be used when actual work is not in progress within certain limitations depending upon which section is undergoing repairs.

TANK REPAIRS

The caulking of seams and rivets and even the replacement of defective rivets or bolts in steel tanks may be accomplished by the method described above.

The "stringing" method is usually used in replacing a tank rivet or bolt, the procedure being somewhat different from

that used when "stringing" bolts into sections, a description of which follows:

A defective bolt or rivet is removed and a wooden plug, through the center of which projects a piece of heavy iron wire, formed into a hook on the end, and about two feet long, is inserted in the hole.

A line with a sinker attached is dropped down from the tank gallery close to the plating and moved slowly along until it comes in contact with the projecting iron hook below.

The line is then drawn through the hole in the tank plating, the string bolt attached from above and the repair proceeded with as described in the text "Caulking Rivets or Seams," and illustrated in Figure 6.

This is a rather wet operation, but sometimes will be found to obviate the necessity of landing the holder and lowering the tank water.

OTHER METHODS

Many methods, other than those described here, are resorted to from time to time in making holder repairs, some of which are very ingenious. They cannot all be described, however, in a discussion of standard practice.

Special methods and devices will suggest themselves to engineers and supervisory men as necessity arises but, generally speaking, any ordinary repair work can be accomplished by one or more of the above methods or modifications of them.

Technical Men—Attention

THE Technical Section of the Association will hold two conferences this year, one on distribution and one on production. This will be the third distribution conference, and the first production conference.

These conferences are proving to be extremely valuable, as the work of the Section falls into too many classifications to permit consideration of details at the annual meetings, and so the conferences, through discussion and intense study of all problems of interest, are attracting many men.

The distribution conference will be held at Baltimore, Md., April 4 and 5.

The production conference will be held at Cleveland, Ohio, May 31 and June 1.

For further details write H. W. Hartman, secretary, Technical Section, A. G. A.

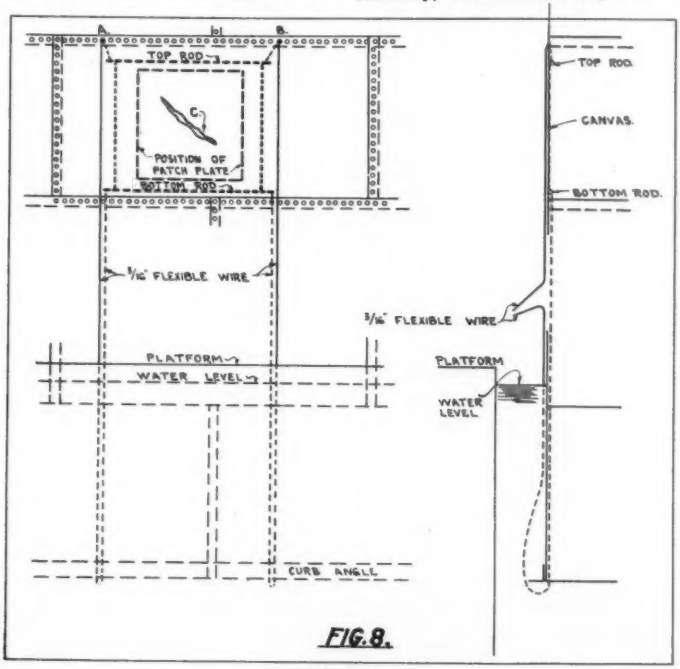


Figure 8

Why Capitalize Convention Attendance?

Some Suggestions That Show the Way to Increased Dividends for All Concerned

By O. F. POTTER
Assistant to General Auditor, The Public Service Electric & Gas Co., Newark, N. J.

THE increase in attendance at our yearly conventions is viewed with considerable satisfaction. Worthy of particular attention is the growing number of delegates registered from the larger companies.

The great benefit that the individual derives from attendance at conventions is not alone the information gleaned from the papers and discussions in the various section meetings, but also in the contacts made on the outside. The broadening effect of such intercourse is of incalculable value to the employee privileged to attend the convention. Much information is obtained under very pleasant circumstances, and the individual is made bigger and broader as a result of this contact.

Little need be urged about this phase of attendance at conventions, as the social instinct of the man is sufficient to initiate acquaintances. As to the benefit he derives from the meetings, much has been said and subscribed to by all. It is in connection with the benefit derived by the company, however, that all has not been expressed.

In retrospect, the proceedings of the American Gas Association and of its predecessors, the National Commercial Gas Association and the American Gas Institute, furnish mute but eloquent testimony to the great amount of thought and effort put upon committee reports and papers in years gone past. How much these efforts have helped our company members is difficult to estimate, but that the result has been without benefit, in some degree at least, is beyond belief. In order that the time and effort expended by the various committees, past, present and future, should be to the benefit of the company, it devolves upon each one to devise some means of crystalizing the results of the committee's work.

It has been thought wise by some organizations to secure reports and papers a week or ten days in advance of the conventions, and to distribute them among the employees designated to attend the convention. Dinner meetings and round-table discussions have been held to discuss the papers preliminary to the departure of the men for the convention, and each one has been appointed to cover a report or reports with the understanding that, upon the employee's return from the convention, another get-to-gether meeting will be held and the results of the convention and the discussions of the various papers brought back and gone over. It is at this second meeting that recommendations made at the convention can take definite form, and steps be taken

EDITOR'S NOTE

THE author has brought up for discussion a most interesting and timely subject. Sending men to attend conventions is expensive for the company, and some definite and tangible return should be the company's benefit.

A committee on the Utilization of Convention Material for Employee Education, a sub-committee of the 1926 committee on the Education of Gas Company Employees, made a comprehensive study of this phase of employee relations, and their suggestions are appended to this article. A. E. Forstall was chairman of this sub-committee, and he was assisted by L. R. Dutton and E. B. Luce.

An interesting letter from E. R. Acker, general commercial manager, Central Hudson Gas & Electric Company, Poughkeepsie, N. Y., is included also, as it contains suggestions worthy of consideration.

WE are very much interested in the dissemination of the information obtained at the American Gas Association Convention to all members of the organization. We have discussed various methods by which our organization could make the most of the opportunities presented by such a convention and are planning at the next convention to have all of our people concentrated as nearly as possible in one location so that daily meetings may be held of the entire group at which assignments to particular subjects may be made and discussions had of the various important points developed by the group. We have not done this in the past but have merely had each delegate assigned to a particular subject before going to the convention upon which he was expected to make a written report when he returned. These reports have been circulated through the organization for whatever they are worth. In many cases, they have merely been extracts from written papers and have been, we feel, not particularly productive.

I feel personally that it is difficult to get very much group discussion of convention activities after the various delegates have gotten back in the harness, so to speak, and are pressed for time by their regular routine work. This is particularly true in our own case where our districts are scattered and it would be rather difficult to get the groups together.

We feel that at every convention there are certain new ideas and developments which should be called to the attention of our group and discussed on the ground. In addition, there are of course specialized subjects for the departmental people and these we propose to assign as I have said, to the various individuals interested.—E. R. Acker, general commercial manager, Central Hudson Gas & Electric Co., Poughkeepsie, N. Y.

which will lead to their eventual adoption by the local company.

This plan, if followed, would have a dual result: First, it would assure the company of whatever benefit it might derive from the results of the committee's work while the subject, or subjects, are still fresh in the minds of the delegates; second, it would increase the benefit derived by the individual. The employee attending the convention with the understanding that he must carry back a message on a certain subject cannot help but feel some little responsibility, and he returns and reports with considerable pride the outcome of the various discussions. The division of the reports, as suggested above, will also make each man's task a comparatively light one and enable him to feel, to some extent at least, at liberty to go around and fraternize with the various members of his section.

In this latter connection, there is one point which should be stressed. Each year new men are attending the convention for the first time. It would seem incumbent upon the other members of their sections to take them in hand, make them feel at home, and urge them to take an active part in the discussions. Every one attending a meeting should be interested actively in the work of that section and in all of its discussions. There is nothing so satisfactory to a chairman of a section as to have active discussion, confined to the subject in hand. Every member present, new and old, should feel impelled to assist in making their meeting the best of the convention.

It is felt that if every company sending representatives to the convention would organize its "class" of delegates before the convention, allot the papers and reports, and hold its meetings upon their return, the association would benefit greatly by their interest, the men would be strengthened because of having gained greater self-confidence for having assisted in the discussions carried on, both at the convention and at the meeting held upon their return, and the company will greatly benefit by reason of the conclusions arrived at and the reports brought back by these same men to their respective organizations.

The suggestions of the 1926 Committee on the Utilization of Convention Material for Employee Education are given below:

1. All employees who attend the convention should be required to take notes on various aspects of the program, exhibits, etc., in accordance with prearranged plans which will assure covering the convention completely. This will make it possible for them subse-

(Continued on page 116)

Building Good Will by Customer Contacts

The Pink Ticket Plan Is an Aid In Rendering the Best Possible Service to the Gas Customer

By H. T. EAST

Service Engineer, Public Service Company of Northern Illinois, Chicago, Illinois

H. T. East

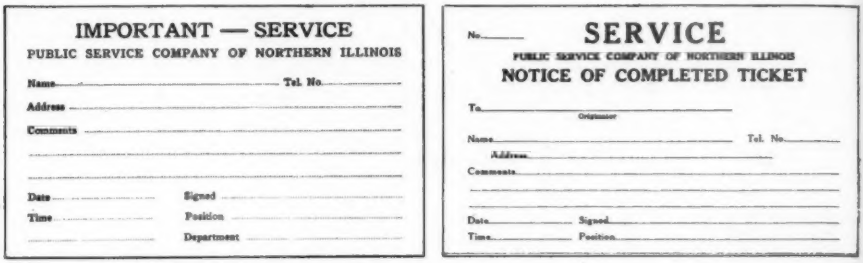
THE day has passed when any gas company can ignore the necessity for rendering good service and for cultivating the good will of its customers. The more progressive gas companies now place great emphasis upon promptness in handling service calls from consumers. Many have found it advisable to do minor repair work, adjusting appliances and rendering similar service on the customers' premises without charge. Use is made of these customer contacts to impress the consumer with the fact that the company is genuinely desirous of rendering good service and wants to conduct its business in a manner that will merit the good will of the customers. It cannot be denied that such policies have done much to place the gas companies in the high esteem in which they are generally held today.

After the gas company has set up and perfected the machinery to take care of customers' needs and desires promptly and efficiently, there might appear to be little more that could be accomplished in this direction. It naturally follows that any extension of a company's good will building efforts through the medium of customers' service contacts should be directed toward learning of additional opportunities to serve. For every customer who complains or requests some service which the company is prepared to furnish, there are undoubtedly several customers who, for one reason or another, fail to communicate their desires or grievances to the company. Proof of this condition is found in the results of house to house inspections and interviews which some companies have conducted.

A number of utility companies have adopted a plan whereby the aid of their entire personnel is enlisted in a continuous campaign to discover and report opportunities to better serve their customers. All employees, from office boys to officers, can help the company and themselves by participating in the plan. Obviously the plan must not require any particular effort on the part of the individual employee if his active participation is to be obtained. The Pink Ticket plan now successfully employed by the Public Service Company of Northern Illinois is typical of similar plans adopted by other companies in the utility field.

Under this plan a pad of small memorandum forms called Pink Tickets are placed in the hands of each employee. They are expected to carry these tickets at all times, in and out of working hours. This form is pink in color to distinguish it as important. It is of pocket size. Space is provided for the name and address of the customer, comments as to the nature of the service desired, the date and time received, as well as the name, position, and department of the employee originating the ticket. When any employee, either during or after working hours, learns of some complaint, criticism, grievance, or service request, a Pink Ticket is filled out and either handed to a foreman or department head or sent directly to the secretary of the system by company mail. A Pink Ticket secretary is appointed for each district or major department to administer the system.

Upon receipt of a Pink Ticket, the sec-



IMPORTANT — SERVICE

PUBLIC SERVICE COMPANY OF NORTHERN ILLINOIS

Name ..... Tel. No. .....

Address .....

Comments .....

.....

.....

Date ..... Signed .....

Time ..... Position .....

..... Department .....

No. _____ SERVICE

PUBLIC SERVICE COMPANY OF NORTHERN ILLINOIS

NOTICE OF COMPLETED TICKET

To _____
Originator

Name _____ Tel. No. _____

Address _____

Comments _____

_____

_____

Date _____ Signed _____

Time _____ Position _____

On the left is shown the Pink Ticket. The form on the right notifies the originator of the Pink Ticket of its disposition

retary enters it on his records and immediately forwards the ticket, or copy of it, to the head of the department whose function it is to take care of matters of that particular nature. The department concerned renders the service, investigates and disposes of the complaint, or furnishes the information desired without delay and returns the Pink Ticket to the secretary with full information as to how the matter was handled. The secretary then fills out another form which informs the employee originating the Pink Ticket of its disposition. It is the duty of the secretary to keep records of tickets and to follow up those referred to department heads so as to avoid delay in their execution.

This simple plan provides a means whereby the company can learn of opportunities to serve which might otherwise never come to light. There are no restrictions as to the nature of matters which can be reported through this system. The Pink Ticket may also be used to report a service rendered a customer so that the action may be confirmed and a record kept of the employees' efforts. The only effort on the part of the employee participating in the plan is filling out the ticket and forwarding it in the easiest way to the secretary; he has no further obligation. Pink Ticket matters referred to any department are handled along with other departmental functions, but it is required that they receive prompt attention.

Employees are often asked questions about the company or some detail of the gas business which they cannot answer offhand. In this age of specialization and organization few employees are qualified to furnish any information a customer might request, and direct contact with other departments is impossible for the average worker. Heretofore, many employees have either refused to accept complaints or service requests or have referred the customer to the department concerned. This plan makes it almost as easy to communicate these opportunities to serve to the proper department as it is to refuse to accept them.

It sometimes happens that complaints and other matters are received through Pink Tickets which must be entered in a file provided for the specific purpose. In all such cases it is the duty of the Pink Ticket secretary to see that the complaint or other matter reaches the proper record and that the Pink Ticket routine is followed throughout so as to avoid any criticism of the originator, since such criticism would tend to discourage further participation in the plan. By giving the employee credit for having rendered the customer and the company a service, his interest is aroused and a further participation is encouraged. It is desirable for the department head to be advised of Pink Tickets turned in by those reporting to him so that the efforts may be recognized properly.

The Pink Ticket can be used in many ways. A customer may desire some minor service or have some petty griev-

ance which he does not consider important enough to bring to the attention of the company. When such cases come to an employee's attention and are reported through a Pink Ticket, the matter is taken care of and the customer is favorably impressed with the fact that a large organization moved to attend to so small a matter. Customers sometimes harbor a feeling that it is useless to take matters up with the company. Such cases are often discovered through the Pink Ticket system and the disgruntled customer is converted into a booster after receiving concrete proof of the company's real attitude.

Again, there is a class of people who "knock but do not kick." These "knockers" will sooner or later make a statement before an employee who will ask for an opportunity to prove that the company is eager to correct the trouble complained of and by means of the little Pink Ticket messenger it is taken care of. Strict attention to customers' wants cannot fail to develop a favorable opinion for the gas company.

Present day gas companies have a genuine desire to answer questions which arise in the minds of consumers, to attend promptly to every grievance, real or fancied, and to correct adverse opinion. The Pink Ticket is an aid in accomplishing these ends. Experience has proved that, properly used, the plan will improve customers' relations and produce good will.

It has been found that employees will forget to take part in the plan unless reminded occasionally. This need may be filled by conducting a Pink Ticket column in the company periodical, wherein interesting facts concerning the plan are set forth. This column may also be used to create a competitive spirit between departments or districts by showing the number of tickets turned in each month by the various divisions. Outstanding examples of benefits derived through the system may also be communicated to the employees in this manner.

After three years of experience with the Pink Ticket plan in this company and the observations of similar efforts by other utility companies, we are convinced that it is a workable plan which fills a great need and one which produces benefits out of all proportion to the effort required. It is felt that all gas companies can inaugurate a similar system profitably without any considerable expense or change in present departmental procedure. Details of the plan, together with samples of forms and routines are available and will be furnished upon request to companies contemplating the adoption of such a plan for increasing its opportunities to improve service and better satisfy its patrons.

New Main Under Construction in California

INTERESTS controlling the Southern California and Midway Gas Companies, in conjunction with Southern Counties Gas Company and Los Angeles Gas and Electric Corporation, have begun construction of the most important gas transmission projects ever undertaken in the United States.

In order to prevent the possibility of any gas shortages in the communities these companies serve, a fifteen-inch high-pressure pipe line, seventy-five miles in length, is being built to carry natural gas from the highly productive Ventura-Avenue Field to the City of Los Angeles. A new corporation, the Ventura Fuel Company, has been organized to carry out this project, with A. C. Johnston, assistant treasurer and comptroller for the Southern California and Midway Companies, in charge of the new company's Los Angeles office.

The Midway Gas Company is supervising the erection of the compressor station and equipment at Ventura, while Southern Counties Gas Company is in charge of pipe line. According to A. B. Macbeth, executive vice-president of the Southern California and Midway Gas Companies, and President of the American Gas Association, the new line will be the largest gas carrier in the West. Its capacity will be approximately forty-five million cubic feet of gas a day.

Rapidly rising domestic and industrial gas consumption in Southern California has made necessary the continual expansion of gas companies operating in this territory. The new transmission line will be in operation by May first.

EDITORIAL

By ALEXANDER FORWARD
Managing Director

How Shall We Tell It?

ONCE more the question of the American gas industry's slogan has come up. This time Al Fischer of the Michigan Committee on Public Utility Information started it by stating his opinion that the slogan "If It's Done with Heat, You Can Do It Better With Gas" could be improved upon. Our friend Floyd Parsons invited comments and has published some of the replies in his "Facts and Fancies."

Some are of the opinion that the slogan could be shortened and consequently used with better effect. It is felt by some of the critics that the inclusion of the word "If" contains an element of doubt and robs the phrase of the requisite positiveness. It is gratifying to note the interest shown in the subject by those who have set their wits to work to coin a sentence that will serve the needs of the industry in attracting the eye and the ear of its present and potential customers.

Again, there are some who, noting the discussion, have expressed concern over the possibility of a change in a slogan which has, they feel, fairly stood the test of time and to establish which a considerable amount of money and effort has been expended in advertising and publicity.

The Association needs and must have the best available phrase for use in the era of expansion upon which it has entered. All of us have witnessed in recent years successful efforts by industries which have succeeded in registering in the public mind a sentence, even a word or two, which has come to tell its story of their appeal to their public. A good deal, of course, depends upon the nature of the product and upon the character of its public. Nevertheless, no one will deny that a good, expressive, striking, comprehensive slogan is a great help.

Therefore, the A. G. A. MONTHLY not only invites but urges its readers to write their suggestions, their comments and criticisms on "If It's Done With Heat, You Can Do It Better With Gas," its value to the industry and the public, its strong and its weak points together with any and all suggestions for a new or revised wording that in their judgment will turn the trick. It should make an interesting discussion and the exchange of views ought to get us to a definite decision on one hand or the other.

Won't you give your thought and do it now?

© Brown Bros.

The Effect of Smoke on Health

Does it Have Any Appreciable Influence on Respiratory Diseases Such as Pneumonia and Tuberculosis?

By WILLIAM CHARLES WHITE, M.D.
Pathologist, U. S. Public Health Service; Chairman, Medical Research Committee, National Tuberculosis Association

SMOKE is the most visible pollution of the air. In the last fifty years our cities of greatest industrial activity in steel and railroads have turned day into night, and night into intense darkness. There are many reasons for demanding the control of smoke, but we have so far failed to make the most powerful of all reasons—that smoke has a baneful influence on the health of those who must daily breathe it—so convincing that all will clamor for its suppression.

In 1914 a group of men undertook a study of the smoke conditions in Pittsburgh, which provides in exaggerated form a constant natural environment and atmosphere of the type that should give the answer to the questions considered in this paper. It is an ideal place to pursue the study of the influence of smoke on diseases of the lungs. Any conclusion drawn from such studies however, to have influence, must be so graphic as to overcome other great factors. Smoke means active business, profit to owners and high wages to workers.

Pittsburgh presents two striking facts. It has a low tuberculosis death rate year after year. On the other hand it has the highest constant pneumonia death rate of any community in the world. Furthermore, in analyzing the pneumonia death rate of the city by wards, it became clear that the denser the smoke content of the air, the higher is the pneumonia death rate. With respect to tuberculosis, on the contrary, the density of smoke seemed to bear no relation to the tuberculosis death rate. If one could reason safely from this study, he would say that smoke has no influence on tuberculosis but has a tremendous influence on acute lung diseases. This is probably near the truth, but we have not yet enough evidence to make such a statement. The analysis recently carried out by Dr. Thompson of the U. S. Public Health Service indicates

Abstract of paper presented at recent meeting of American Society of Mechanical Engineers, New York City.

that there is an industrial health hazard in work in the steel mills that has a definite relation to the high pneumonia mortality in Pittsburgh.

Pneumonia as a basis of argument for the prevention of smoke has never been very successful. This is undoubtedly due in large part to the lack of definite knowledge as to the effects that smoke has on health in causing or promoting diseases. In general, wherever efforts are being made by communities with a smoke nuisance to prevent smoke, such efforts are based on consideration of discomfort rather than health. If it can be definitely proved, as the above study indicates, that smoke causes a high death rate from pneumonia, although the public has never appreciated the importance of acute respiratory diseases due especially to their after effects, this will be a powerful argument for prevention of smoke.

I would like to present for consideration a bit of evidence that I have tried as a measuring rod upon the basis of supply and demand. If acute diseases of the upper air passages, such as colds, laryngitis, rhinitis, pharynigitis and bronchitis are more prevalent in a smoky atmosphere, one would expect to find the number and wealth of physicians who devote themselves exclusively to the treatment of these diseases to be greater in Pittsburgh than in cities of the same size but without a smoky atmosphere. As designated by the Register of American Physicians, the nose and throat specialists are:

Pittsburgh, 41 for a population of 580,000
Baltimore, 40 for a population of 730,000

These figures show that Pittsburgh as a market provides for a similar number of such practitioners, although Baltimore is a city one fourth larger.

Perhaps more convincing than this are the data that resulted from a study which I made of eight city squares in Pittsburgh compared with the rest of the City. The eight squares chosen were in one of the low river level wards on the South side in the mill district. The outstanding observation in this district was the prevalence of acute respiratory diseases, children with running noses, running ears and all the attendant sequelae of a constantly infected respiratory tract. As a health hazard this can not be over estimated, and it is a convincing argument against smoke if it can be shown definitely that the smoke is the primary factor in causing the conditions observed.

Our present experimental knowledge is insufficient to explain our impressions that smoke should be suppressed for its

(Continued on page 112)

Anti-smoke propaganda window display used by the Laclede Gas Light Company, St. Louis, Mo.

A Simple Method of Calculation for Problems in Compression and Dehydration of Gas

By D. L. JACOBSON
Research Chemist, The Koppers Co., Pittsburgh, Pa.

CONSIDERATION of compression as a means of removing moisture from gas presents certain problems, the solution of which may require somewhat involved calculations. The general subject has been discussed in the paper on "Dehydration of Manufactured Gas" read by F. W. Sperr, Jr., at the 1926 convention of the American Gas Association. The present article offers a relatively simple method of calculation which may be applied rather generally and which may be of help to those who may be interested in such problems.

For purposes of detailed illustration, two such problems are worked out here in full. The solution of these problems gives data on the pressure required to give gas of a specific dew point under certain temperature conditions. Using the same method of calculation, the curves in Fig. 1 have been worked out.

As a further matter of general interest, the curve in Fig. II, showing the horsepower required for isothermal compression per thousand cubic feet of gas per hour to yield gas of a dew point of 30° F is shown.

The writer wishes to acknowledge the valuable assistance of W. J. Klaiber, of The Koppers Company, who assembled the data and drew the curves included in this paper.

PROBLEM I

A quantity of gas is to be compressed from a temperature of 80° F., saturated with water vapor at one atmosphere, to a final higher pressure at 80° F., at which higher pressure the gas will contain such an amount of moisture that if the gas is later expanded to atmospheric pressure, it will have a dew point of 30° F. What is the required final pressure?

Let us take as a basis one pound of dry air at 80° F. with the accompanying water vapor to saturate it. Gas and air are spoken of interchangeably here as the relations hold true for any gas following the perfect gas laws.

a. Initial Condition—Air saturated with water vapor at 80° F. and at atmospheric pressure.

b. Final Condition—Air at 80° F., at a definite high pressure. This high pressure may be called P (where P = the absolute pressure). The air at pressure P contains such an amount of moisture that if the gas is expanded to atmospheric pressure it will have a dew point of 30° F.

To make the conditions of the problem somewhat clearer, it may be stated that in reaching the final pressure P and temperature 80° F., a considerable amount of moisture is condensed as liquid water. This liquid water is separated out and is not available for any re-evaporation into the gas when the gas is expanded to atmospheric pressure and when it has a dew-point of 30° F. Referring to Goodenough's "Properties of Steam and Ammonia," p. 84, we see that one pound of dry air at 80° F. has a volume of 14.09 cubic feet when saturated and 13.60 cubic feet when dry. The air has a partial pressure of $\frac{13.60}{14.09}$ x (14.7 pounds per square inch) = 14.19 pounds per square inch. The water vapor has a partial pressure of 0.507 pounds per square inch. Let us then picture the initial conditions graphically—

INITIAL CONDITIONS

(1) *Air*—

pressure	= 14.19 lbs./sq.in. (absolute)
vol.	= 14.09 cu.ft.
temp.	= 80° F.
weight	= 1 lb.

Air—
pressure = 14.19 lbs./sq.in.
vol. = 14.09 cu.ft.
temp. = 80° F.

(2) *Water Vapor—*
pressure = 0.507 lbs./sq.in. (absolute)
vol. = 14.09 cu.ft.
weight = 0.0223 lbs.
temp. = 80° F.

Water Vapor—
pressure = 0.507 lbs./sq.in.
vol. = 14.09 cu.ft.
temp. = 80° F.

For the final condition, as stated above, the total pressure on the system = P (absolute), Temp. = 80° F. Partial pressure of water vapor = 0.507 pound per square inch since gas or air must be saturated at 80° F. Gas when expanded to atmospheric pressure has a dew point of 30° F. Referring to Goodenough again, we see that there is at 30° F. dew point, 0.00344 pound of moisture per pound of dry air.

For the final condition the total pressure on the system = P

Let us call the partial pressure of the gas or air = p

Let us call the total volume of the gas or air = V

The final condition may be considered graphically:

Air—
pressure (partial) = p
volume = V
temp. = 80° F.
weight = 1 lb.

Water Vapor—
pressure = 0.507 lbs./sq.in. (absolute)
volume = V
temp. = 80° F.
weight = 0.00344 lb.

The final conditions may be compared with the initial conditions as described above.

Considering the air (or gas) in its initial and final conditions, since the weight of air is the same and its temperature is same, the pressure-volume product must be identical.

initial final

Therefore $(14.2)\ (14.10) = p\ V$ (1) This may be called equation (1).

Further, in the final condition, the sum of the partial pressures must equal the total pressure, therefore

$P = p + 0.51$ (lbs./sq.in.) (2) This may be called equation (2) (pressures are absolute).

Since we now have 0.00344 pound of water vapor, instead of 0.0223 pound in the initial condition, the volume V must be

$V = \frac{0.003444}{0.0223}(14.09) = 2.175$ cu.ft.

Substituting in (1), $p = \frac{200}{2.175} = 92.0$ lbs. per sq.in.

Substituting in (2), P = 92.5 lbs. absolute, or $\frac{14.7}{77.8}$ lbs. gauge pressure. This is the required final pressure.

The above problem is solved in the same way for gas of low specific gravity as for air, except that the basis taken is 14.09 cubic feet of saturated gas at 80° F. instead of one pound of dry air. For 80° F. the pressure required to yield gas of the required dryness is 77.8 pounds gauge.

The above problem No. 1 has been worked out for a number of different initial temperatures and the results are plotted in Fig. 1 on the curve "Expanded to Atmospheric Pressure."

PROBLEM II

A quantity of gas is to be compressed from a temperature of 50° F., saturated with water vapor, at one atmosphere, to a final higher pressure at 50° F., at which higher pressure the gas will contain such an amount of moisture that if the gas is later expanded to 15 pounds gauge pressure, it will have a dew point of 30° F. (at 15 lbs. gauge pressure). What is the required final pressure?

This problem will be solved here by the same method used in Problem I. Let us take as a basis one pound of dry air at 50° F. with the accompanying water vapor to saturate it.

a. Initial Condition—Air saturated with water vapor at 50° F. and at atmospheric pressure.

b. Final Condition—Air at 50° F., at a definite high pressure. This high pres-

sure may be called P (where P = the absolute pressure). The air at pressure P contains such an amount of moisture that if the gas is expanded to a gauge pressure of 15 pounds per square inch, it will have a dew point of 30° F. (under 15 lbs. gauge pressure).

Referring to Goodenough's "Properties of Steam and Ammonia," p. 84, we see that one pound of dry air at 50° F. has a volume of 13.00 cubic feet when saturated and 12.84 cubic feet when dry. The air has a partial pressure of

$$\frac{12.84}{13.00} \times (14.7 \text{ lbs. per sq.in.}) = 14.52 \text{ lbs. per sq.in.}$$

The water vapor has a partial pressure of 0.178 pound per square inch. The initial conditions are then graphically:

(1) *Air—*
pressure = 14.52 lbs./sq.in.
vol. = 13.00 cu.ft.
temp. = 50° F.
weight = 1 lb.

Air—
pressure = 14.52 lbs./sq.in.
vol. = 13.00 cu.ft.
temp. = 50° F.

(2) *Water Vapor—*
pressure = 0.178 lb./sq.in.

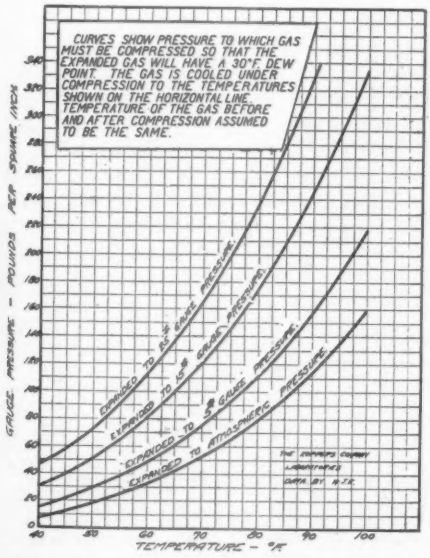

CURVES SHOW PRESSURE TO WHICH GAS MUST BE COMPRESSED SO THAT THE EXPANDED GAS WILL HAVE A 30°F. DEW POINT. THE GAS IS COOLED UNDER COMPRESSION TO THE TEMPERATURES SHOWN ON THE HORIZONTAL LINE. TEMPERATURE OF THE GAS BEFORE AND AFTER COMPRESSION ASSUMED TO BE THE SAME.
GAUGE PRESSURE - POUNDS PER SQUARE INCH
TEMPERATURE - °F
COMPRESSED TO 15# GAUGE PRESSURE
EXPANDED TO 5# GAUGE PRESSURE
EXPANDED TO 0# GAUGE PRESSURE
EXPANDED TO ATMOSPHERIC PRESSURE
THE KOPPERS COMPANY LABORATORIES DATA BY W.T.K.

Fig. 1: Pressure required for dehydration to 30 degree dew point

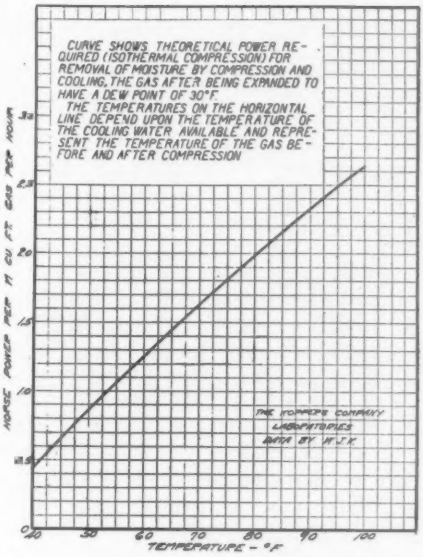

CURVE SHOWS THEORETICAL POWER REQUIRED (ISOTHERMAL COMPRESSION) FOR REMOVAL OF MOISTURE BY COMPRESSION AND COOLING. THE GAS AFTER BEING EXPANDED TO HAVE A DEW POINT OF 30°F.
THE TEMPERATURES ON THE HORIZONTAL LINE DEPEND UPON THE TEMPERATURE OF THE COOLING WATER AVAILABLE AND REPRESENT THE TEMPERATURE OF THE GAS BEFORE AND AFTER COMPRESSION
HORSE POWER PER M CU. FT. GAS PER HOUR
TEMPERATURE - °F
THE KOPPERS COMPANY LABORATORIES DATA BY W.T.K.

Fig. 2: Theoretical power for dehydration by compression to 30 degree dew point

vol. = 13.00 cu.ft.
temp. = 50° F.
weight = 0.00764 lb.

Water Vapor—
pressure = 0.178 lb./sq.in.
vol. = 13.00 cu.ft.
temp. = 50° F.

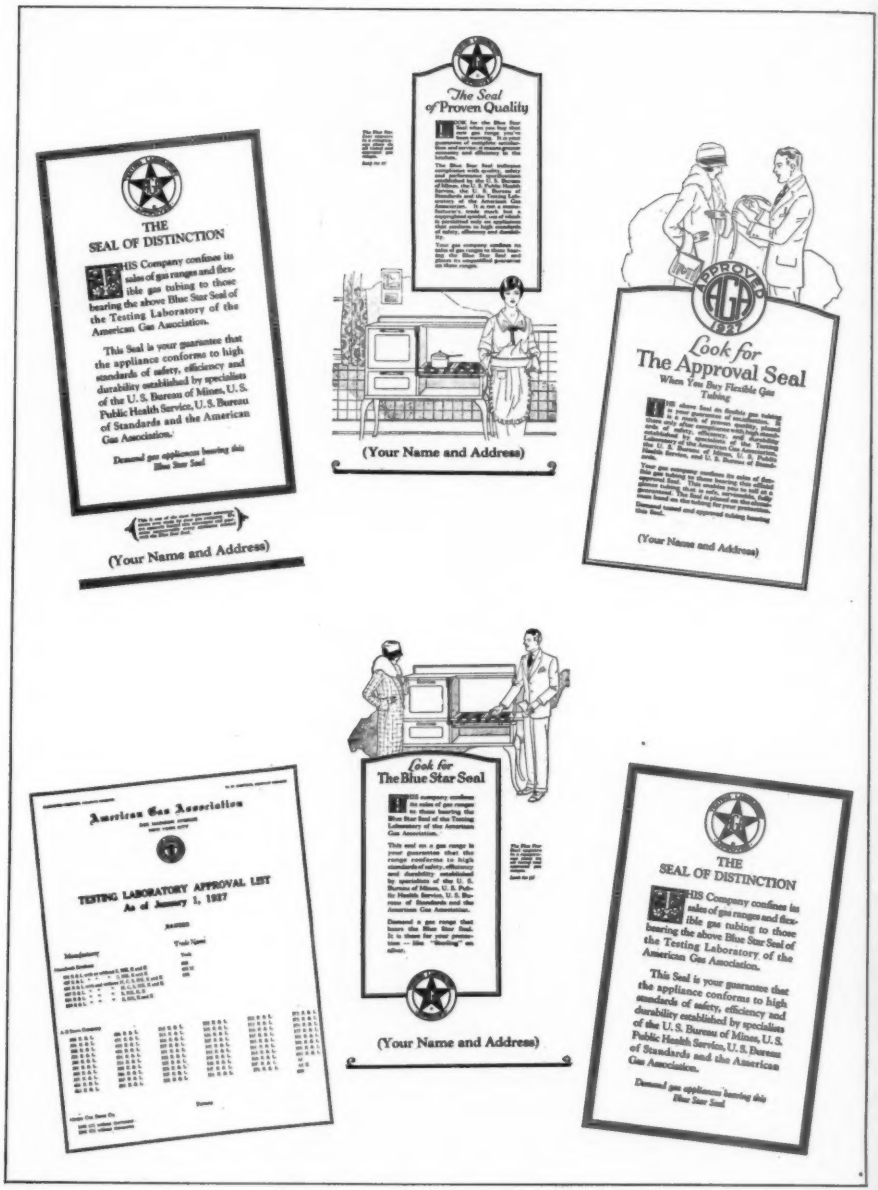
For the final condition, as stated above, the total pressure on the system = P (absolute), Temp. = 50° F. Partial pressure of water vapor = 0.178 lb. per sq.in. since the gas or air must be saturated at 50° F. Gas when expanded to 15 lbs. gauge has a dew point at 30° F.

We will next calculate the pounds of water vapor required to saturate one pound of dry air at 30° F. under a pressure of 15 pounds gauge. Using one pound of dry air as a basis, and, referring to Goodenough, p. 83, at 0 lb. gauge (14.7 lb. absolute) and 30° F., there is 0.00344 lb. water per pound of dry air.

The partial pressure of the air = 14.70 — 0.08 = 14.62 lbs./sq.in. at 30° F. 0 lb. gauge.

The volume of saturated air = 12.41 cu.ft. of 30° F. and 0 lb. gauge. Now at 15 lbs. gauge pressure and 30° F., the

(Continued on page 116)


THE
SEAL OF DISTINCTION
THIS Company confines its sales of gas ranges and flexible gas tubing to those bearing the above Blue Star Seal of the Testing Laboratory of the American Gas Association.
This Seal is your guarantee that the appliance conforms to high standards of safety, efficiency and durability established by specialists of the U. S. Bureau of Mines, U. S. Public Health Service, U. S. Bureau of Standards and the American Gas Association.
Demand gas appliances bearing this Blue Star Seal
(Your Name and Address)
The Seal of Proven Quality
(Your Name and Address)
APPROVED
1927
Look for
The Approval Seal
When You Buy Flexible Gas Tubing
(Your Name and Address)
American Gas Association
TESTING LABORATORY APPROVAL LIST
As of January 1, 1927
Look for
The Blue Star Seal
(Your Name and Address)
THE
SEAL OF DISTINCTION
THIS Company confines its sales of gas ranges and flexible gas tubing to those bearing the above Blue Star Seal of the Testing Laboratory of the American Gas Association.
This Seal is your guarantee that the appliance conforms to high standards of safety, efficiency and durability established by specialists of the U. S. Bureau of Mines, U. S. Public Health Service, U. S. Bureau of Standards and the American Gas Association.
Demand gas appliances bearing this Blue Star Seal

The Blue Star Seal merchandising plan the Association is offering to member companies. At the top are three of the advertisements for newspaper use. Below on the left is shown the latest list of approved appliances. On the right is a reproduction of the window display card, the text of which has also been used for an envelope stuffer. In the center is shown another of the advertisements. Write to Headquarters for complete information

The Where, When, and How of Accidents

An Analysis of Accident Reports is Necessary, if Preventive Measures are to be Effective

By D. P. HARTSON
Engineer, Equitable Gas Company, Pittsburgh, Pa.

IT is for executives, safety men, foremen, and all employees to take all that may be gained from the unfortunate accident experiences of fellow workmen. Experience is a costly teacher. The burned child avoids the fire. The injured man is usually careful after it is too late. Why not save him all that suffering and painful experience?

This brings the question: "Why keep and analyze accident reports?" Figures must be used to sell safety to the average man. The fact that men have lost their eyesight through failure to wear goggles and that cases of serious eye injury are occurring in your own company should impress your men that eye protection is not an abstract idea.

The complete accident report should answer satisfactorily the three leading questions. Where, when, and how did the injury occur? Each of these answers is important.

Before the analyzation of accidents may be accomplished, complete reports to contain important facts on the injury case are absolutely essential. Opinions and suppositions are of secondary importance; in fact, they may be very misleading. The foreman, supervisor, and other employees should be taught to place in the report the actual facts concerning the where, when, and how, of the accident.

WHERE

This is of great importance as any analysis of accident reports made by the safety man or executive will show at a glance the weak "where's" in the plant. If one section of the plant or one machine is the source of several accidents, it may call for a strong safety educational drive and perhaps extra safeguards.

For public service companies the "where" may mean the location of work —ditch, pole, right-of-way, boiler house, generator room, etc., the geographic location being of less importance.

With the increase of traffic in our towns and cities the "where" of street accidents is the most important of the three items. Public safety organizations invariably have maps of their cities upon which pins or other symbols mark the street intersections with the number of accidents which have occurred at that point. These locations call for concerted preventive measures.

A study of the "where" of street accidents may mean the changing of traffic rules, the shifting of traffic to other routes and the greater protection of pedestrians at corners.

WHEN

Every accident report should bear not only the date but also the time of day. On analyzing accident reports in many industries it has been found that the hours near the quitting time are the most prolific in accidents. This being so, then it is a direct challenge to the safety man to go deeper into the matter. Was it a lack of thought due to fatigue? Was it due to poor lighting? While the greatest number of street accidents may coincide with the time of rush hours, those of great severity may be at hours when street travel is light. For example, the hours after midnight have been the abrupt ending of many a joy ride to the sorrow of all concerned. To the public utility worker time may mean the consideration of unusual weather conditions—rain, street, ice, or gale. Ask the trouble shooter of a telephone company; he

knows that weather records show January 28 had a temperature hovering around zero. During such weather we can better appreciate how the wrench may have slipped while Pete Burso was making a gas connection in the ditch, or how John Smith slipped on a pole while repairing a wire.

HOW

After answering the "where" and "when," the "how" of an accident often comes very easy, but this is not always the case. Sometimes the participants themselves cannot describe the "how." The accident "just seemed to happen." Here the job of hearing the stories of all the witnesses and others falls on the safety man or committee before the "how" can be ascertained. Many a coroner's jury has been unable to reach a satisfactory decision. For the sake of the future the "how" must be studied and determined, if possible. The mental attitude or condition of the person involved in an accident often has a very direct bearing on the "how." The fact that Henry Smith was worrying about family troubles may have a direct bearing on an accident after years of care.

The "how" is one of the most important items of accident report analysis. Here falls all the usual division of accident causes such as flying objects, falling, stepping on objects, tripping, burns, etc. For statistical purposes the classification of accidents as to type of circumstance is very essential. It is also of great benefit in the study of remedial measures.

Herbert P. Stillwagon and Edwin W. Kopf have furnished the National Safety Council with a series of tables for use in analyzing automobile accidents. These may be found in the proceedings of the Thirteenth Safety Congress (1924), pages 854 to 860. These tables are very thorough and helpful to one analyzing street accidents.

All the foregoing may seem elementary, but it is nevertheless fundamental in the great work of accident prevention. The accident report has been a much abused and unused object. If the asking of questions is carried to the extreme the purpose is often defeated. Workmen will fail to report minor injuries rather than submit to the inquisition which a complicated report blank may bring. We should not ask the work-

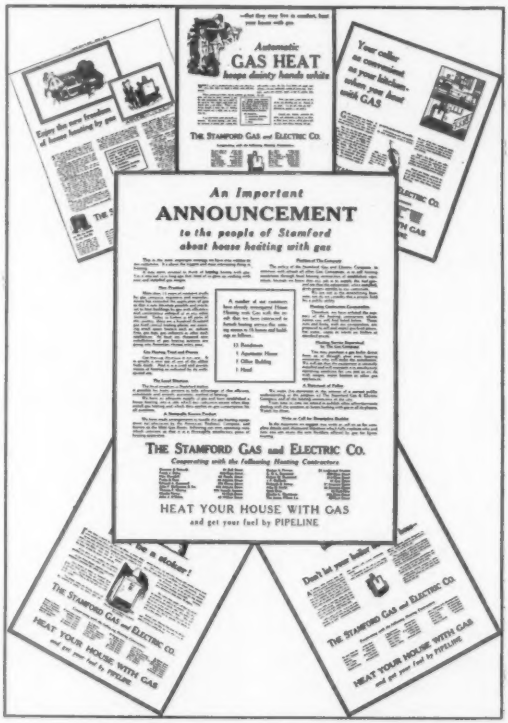
(Continued on page 125)

This colorful billboard has been erected on the site of the new building of the Consolidated Gas Company of New York. The layout consists of three boards. When the building is completed, it is planned to use the billboards at the company's holder properties.

Cooperation Sells House Heating

The Stamford Gas & Electric Company and the Heating Contractors of Stamford Find Mutual Benefit by Working Together

THE efforts of the A. G. A. and the National Association of Master Plumbers and Heating and Piping Contractors to promote better relations between the gas companies and the plumbers is already bearing fruit. Although not directly concerned with the Association program, The Stamford Gas & Electric Company, Stamford, Conn., recently cooperated to the fullest extent with the plumbers and steam fitters of Stamford, with benefit to both parties.


Automatic
GAS HEAT
keeps dainty hands white
THE STAMFORD GAS and ELECTRIC CO.
An Important
ANNOUNCEMENT
to the people of Stamford
about house heating with gas
THE STAMFORD GAS and ELECTRIC CO.
Cooperating with the following Heating Contractors
HEAT YOUR HOUSE WITH GAS
and get your fuel by PIPELINE

A few of the page newspaper advertisements that told Stamford people about gas house heating. The list of cooperating plumbers was included in each piece of copy

GAS HOUSE HEATING INTRODUCED AT LOCAL EXPOSITION

Last June the gas company exhibited a gas house heating furnace at the Exposition of Progress held by the manufacturers and trades people of the city. The interest manifested in house heating by gas was so great that the company decided to initiate a forceful campaign for additional business. Contracts for fourteen boilers were secured as a result of the exposition.

The company decided that it would be advantageous to confer with the local heating contractors concerning the mutual advantages of building a house heating load in the city. On June 30 the interested parties met at a dinner, and preliminary plans were made. The company announced that they were ready to cooperate with the contractors, and that the same plans would apply to the town of Greenwich, Conn. This later town is a few miles from Stamford, but the contractors of Stamford do almost all of the work there.

At a meeting on August 3 a definite plan of co-operative advertising was outlined. The gas company and the manufacturer making the boilers would underwrite a newspaper campaign to which the heating contractors were invited to contribute. No definite amount was stated, and the only provision made was that

those who contributed were to have their names listed in the newspaper advertisements. Twenty contractors decided that it would be beneficial for them to take advantage of this offer.

The advertising consisted of full page newspaper copy once a week. A few of the advertisements are reproduced here.

As a result of the campaign, today there are approximately 46 house heating installations in Stamford, and 15 in Greenwich.

The method of cooperation is outlined below.

The gas company sells but one make of house heating boiler, acting as distributor of the boiler, but not doing any of the installation work. When a customer buys a boiler, he is told that the installation work will be done by a local contractor. It is suggested that he employ his usual contractor to do the job. When the customer does not have a regular contractor, he is furnished with a list of several names, including those of the smaller contractors, so that the work will benefit as many as possible. The gas company also provides supervision to insure a satisfactory installation.

As a result of the plans the contractors have received business they would not ordinarily receive, and the gas company has a house heating load that would have been more difficult to secure if it were not for the 100 per cent cooperation between the interested parties.

The company maintains monthly inspection of the heating plants during the first heating season with no charge to the customer.

The monthly inspection is brought to the attention of the customer by an inspection card that is signed by the inspector and left for record and reference. The receipt of this card is a reminder that the gas company is providing him with heating service by removing all chances of inefficient operation of the equipment and by doing everything possible to insure a minimum consumption of gas for a given load.

The rate in Stamford for house heating is based upon the connected load and the quantity of gas consumed. The demand charge is 4 5/8 cents a cu.ft. of demand per month, from October 1 to April 30. The meter rate is $1.30 per 1000 cu.ft. for the first 5000 and $0.60 per 1000 cu.ft. for all consumption in excess. Only one meter is used, all gas for domestic purposes being sold at the same rate.

Those companies that have endeavored to cooperate with the plumbers and heating contractors report, almost without exception, that their house heating business has benefited thereby. Haverhill, Mass.; Fall River, Mass.; Lowell, Mass.; and Chicago, Ill., are but a few of the cities.

An interesting example of cooperation is contained in the following paragraphs, reprinted from the *Heating and Ventilating Magazine:*

Another example of the effectiveness of a close tie-up between a gas company, selling gas for heating purposes, and the local heating contractors is found in Fall River, Mass. In this city 15 installations were made in 1924, 30 in 1925 and 53 in 1926.

The rate for gas for heating is 75c. per 1000 cu.ft., if bills are paid within 15 days. Gas used for other than heating purposes is passed through a separate meter. The gas company employs two heating engineers, who check all buildings prior to acceptance of contract.

The company has had a system of cooperation with the local heating and plumbing contractors of that city in operation for several years. During the past year this has taken definite form. The company gave a dinner at which the majority of the contractors in the city were present. These contractors chose three of their members as a committee to meet with three men appointed

(Continued on page 120)

The truck with the air compressor mounted in place

A Vacuum Cleaner for Gas Services

An Air Compressor Mounted on a Truck Solves An Ill of the Distribution Department

By A. G. FORD
Western United Gas and Electric Co., Aurora, Ill.

I ONCE heard a gas man who had been brought up on low pressure ask of a man raised on high pressure, how high pressure services were cleaned. The high pressure man aptly replied, "We do not use a blow pump." No doubt the low pressure man had been wondering how a blow pump could be used for cleaning high pressure services.

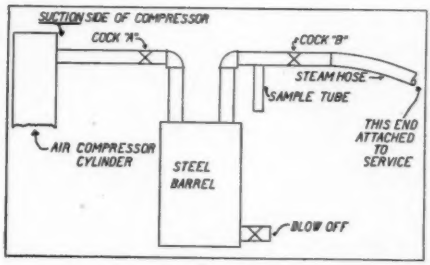
On another occasion, I heard a high pressure man ask a shop foreman in a low pressure town how he cleaned services. The shop foreman's reply was "We do not use a blow pump."

The blow pump to a dirty service is as aspirin to headache. Neither furnishes permanent relief.

The Western United Gas and Electric Company has, as all gas companies have, been troubled with plugged services and for years and years the blow pump was the chief weapon. I am referring now to low pressure services. About a year ago the plugged servioe situation in one of our large towns became so acute, and the relief furnished by blow pumps became so temporary, that we were forced to do a little worrying. Once more necessity demonstrated that it is truly the mother of invention, and, out of it all, we conceived that an air compressor could be used for cleaning services, and could do it by taking the stoppage out of the system instead of blowing it from the service back into the main whence it came, and from there to be carried into another service.

We purchased a small portable gasoline driven air compressor and mounted it on a Ford truck. A steel gasoline barrel was attached to the truck and two 2" nipples welded to its head. A pipe connection was made from the suction side of the compressor to one of these nipples.

A cock was installed in this connection. Then to the other nipple in the head of the barrel, we attached a cock to which was fastened one end of 100 feet of extra heavy steam hose. (See Sketch A.) A sample tube was set in the suction line and a blow-off provided as shown for cleaning the barrel.



A. Method of operation

The method of operation is as follows:

The compressor is backed into the driveway of a complainant. The free end of the steam hose is lead through a basement window and connected to the service just inside the basement wall by means of proper fittings. The meter cock is closed. The operator then closes valve "B" and opens valve "A" at the compressor. The compressor is started and a vacuum of from 15″ to 20″ is drawn on the steel barrel. Cock "A" is then closed and cock "B" quickly opened, and, believe me, dry plugs suddenly have a great affinity for the barrel. If the plugs will not come the first time, they will the second or third. A few applications of the treatment will persuade the most stubborn.

You will note from the above arrangement and operation of valves that there is no possibilty of drawing dirt into the compressor.

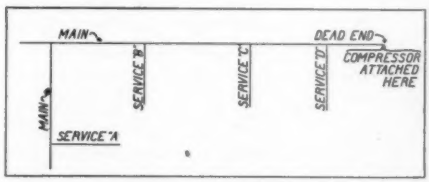
Considerable care must be exercised in using this sort of service cleaner. Not only must the meter cock on the service being cleaned be closed, but it is also well to close meter cocks on all meters in close proximity to the service being cleaned, for the effects of the vacuum are reflected into the main if it is small, and also into nearby services. This means, of course, as the gas has perhaps been shut off in several houses, that all pilots must be taken care of before the gas is again turned on.

I have witnessed the removal of 76 lbs. of rust from one 1¼″ service 120 feet long. I do not mean to say that all this rust came from the service as no doubt some of it was drawn out of the main. My point is that 76 lbs. of rust was removed from the system at one point and with one set up of the compressor.

We have on rare occasions used this apparatus for cleaning mains with no little success, but as this practice necessitates interruptions of service of greater size than we care to experience, it is not often done. We have, however, attached the compressor to the dead end of a main, closed all meter cocks in the neighborhood, and started sucking, opening one service at a time. (See Sketch B.) Referring to the above sketch, the meter cocks on services "A," "B," "C," and "D" are closed. The compressor is started and the instant the main is subjected to the vacuum, a plug or a cap is removed from service "D," thus subjecting the service and main to atmospheric pressure. This practice not only cleans the main, but also cleans the service. Then service "D" is closed to atmospheric pressure and service "E" opened, etc. You can readily see that the vacuum would have very little effect on the service unless it was opened to atmosphere. Of course the line should be purged of all air before being put back into service.

It might be interesting to know that analyses of several samples of dust taken from mains and services disclosed that all samples were composed of at least 75 per cent ordinary iron rust.

I cannot stress too much the precautions necessary in using this cleaner, not only from the customers' safety standpoint, but also from the company property damage standpoint.



B. Method used when cleaning mains

The English Gas Industry and the Coal Strike

How Well the Gas Companies Carried the "Heat Burden of the Day" for England in the Time of Need

BY D. MILNE WATSON
Governor, Gas Light and Coke Company, London England

THE commencement of the coal strike at the beginning of May did not find the gas industry unprepared. Both companies and municipalities had laid in large stocks of coal in anticipation of the strike. These stocks in due course were drawn upon; and they were so extensive that in most cases they were sufficient to last at least three months.

The strike went on and on; and even to-day, when it is supposed to be all over, many of us have received very little English coal—and some of us none at all. If I may be allowed to illustrate the point of the experience of the Gas Light and Coke Company, I may say that up to the present (Dec. 14) we have received from our English coal field, in the Durham district, exactly seven cargoes of coal, which are sufficient to supply us for two days. Where should we be today, if we had not purchased these hundreds of thousands of tons of foreign coal? And where should we be to-morrow, and next week, at Christmas, and in the new year, if we did not have coals coming from America, India, Germany, and all over the world, to help us through the next months? I do not think people realize the fact that the gas industry cannot live from hand to mouth in the matter of its coal supplies. It is absolutely essential that gas undertakings should have a stock of coal; and this stock should be sufficient to last not less than from six to eight weeks—and nine weeks in the winter time.

To secure American or German coal at a time when everybody was clamoring for supplies took, not two or three days, but two or three months, and, therefore, the only way to get what we required was to buy well in advance. So, owing to the uncertainty as to when the strike would end, it was absolutely essential that coal should be bought long before there was any chance of the undertaking running short. It was only because we had the sense and the prevision to buy in advance that people are at the present moment able to enjoy the blessing of a gas supply.

We approached everyone, in the Government and elsewhere, to see if we could learn when the strike was likely to be over, but in September, when the coal we are now using was bought, we were without any semblance of a date for the finish of the strike.

That coal has now to be taken, and it has got to be paid for. We cannot cancel it, or, if we did, it would only be at a terrific cost, which would amount to the same thing in the end. I think it is well that people should know that the Gas Light and Coke Company alone have had to buy 1,600,000 tons of foreign coal; and the price of that coal has been something like £2,400,000 beyond what we

EDITOR'S NOTE

DURING the recent coal strike in England the gas industry proved its worth. Carrying on the business under extreme difficulties, it was forced to depend on foreign coal and to pay the higher prices. The consequent increases in gas rates were small, in comparison, as pointed out by Mr. Watson. In addition, the gas companies rendered the finest sort of public service, not only supplying the public with a fuel for cooking, lighting, and heating, but also keeping essential industries going that would have been forced to close down, increasing the unemployment ranks, if they were deprived of a regular supply of gas and coke.

This material is abstracted from a speech Mr. Watson presented at a meeting of the National Gas Council at Kensington, England, December 13.

should have paid in normal circumstances for English coal. I am referring to the foreign coal we have already received and that which will be coming to hand during the next few weeks. If you allow on the other side a credit of £500,000 for the extra price received for coke, there still remains a net debit balance of £1,900,000.

What about the consumers of gas? They have been in the happy position of having some one whose duty it was to supply them, on the simple turning of a tap, night and day, with all the gas that they desired, and for the greater part they did not have to pay for it on the spot. They run, most of them, a credit account, and at the present moment many have paid practically nothing at all for gas supplied to them over this difficult period. And now, because the strike is over, there is a demand in certain quarters that they should be relieved of the payment of anything extra, while the gas undertaking is still receiving foreign coal. At the present moment the gas industry is living on foreign coal, and it will continue so to do for the next couple of months at least. The consumer must remember that it is this foreign coal which has enabled him, through the gas industry, to have his meals cooked and his house kept warm, while factories have been kept going, where their source of heating or power was gas or coke. Consumers have been enjoying all these advantages ever since May and all the time the gas industry has been bearing the "heat burden of the day" for them.

Take, again, the case of the Gas Light and Coke Company—it is much like many others. For four months after the commencement of the strike there was no increase in the price of gas. With the latest increase, they will be paying an advance of about 23 per cent, whereas the coal we have been buying has cost anything from 100 to 150 per cent more. The gas industry has played a very important part during the strike, in helping to keep the country going; and it should not be blamed for having put up its prices to the moderate extent it has done. The additional income for gas that the Gas Light and Coke Company has received to date has amounted to only £370,000, to put against the £1,900,000. There is no profiteering in the gas industry. We are under restrictions which bind us hand and foot; and it is in the interest of every undertaking to reduce the price of gas as soon as possible. We cannot, however, do the impossible—that is to say, we cannot reduce the price before the coal we have had to buy has been paid for. The gas industry is a public utility service, with special rights and privileges, and special counterbalancing duties. To fulfill those duties in the spirit and the letter has been its aim throughout the anxious seven months now happily over—though our secondary difficulties are not—and we are proud to-day to be able to say that we have not failed.

Cooking Lesson Now Broadcast from WEAF

Anna Barrows

ON Wednesday morning, January 12 at eleven o'clock, The Gas Companies of Greater New York inaugurated a series of broadcasting cooking lessons from station WEAF. Miss Anna Barrows, special lecturer of the Teacher's College of Columbia University delivered the talk, with special instructions for brides.

Miss Barrows will lecture "over the air," every Wednesday morning, at the same hour, for eighteen weeks. She has prepared an authoritative book on homemaking, which will be distributed by all of the gas companies of Greater New York upon request.

The gas companies subscribing to this course are The Consolidated Gas Company of New York, The Brooklyn Union Gas Company, The Kings County Lighting Company, The Brooklyn Borough Gas Company, and The New York and Richmond Gas Company. The Westchester Lighting Co. and the Bridgeport Gas Light Co. are participating.

The Status of Gas Refrigeration

The Success of This New Appliance Will Be Known During the Next Six Months

By HOWARD F. WEEKS

GAS refrigeration is on the threshold of an era of popularity and general public acceptance. Whether or not it will trip on the doorsill depends on several factors, the relative importance of which it is hard to estimate at this time.

Without question, the electric compression refrigerator has "come into its own." No one can deny that it has shown a phenomenal growth, a growth excelled perhaps only by that of the radio. From an authoritative source it has been learned that the sale of electric refrigerators doubled and trebled in 1926; in some localities annual sales quotas were reached during the late weeks of summer.

This proven popularity of the electric refrigerator is of significance when considering the development of the gas refrigerator; production, distribution, and sales of electric machines have been record-breaking—the flaw has been the service problem, an annoyance that has sometimes assumed the proportions of the entire can of ointment, rather than the fly reposing therein. The gas refrigerator, which will entail a relatively negligible service problem, at once has a merchandising advantage over the electric machine, which has, somehow or other, seemed to survive the strenuous drain of service troubles. This freedom from service expense and bother will certainly be appreciated by the customer using the refrigerator, and it will be doubly appreciated by the company that has to pay for the expense of maintaining a large and completely equipped service department.

The public can be sold the idea of mechanical refrigeration by electricity. Can it be sold the idea of mechanical refrigeration by gas? The answer seems to be in the affirmative, but not until the middle of this year will figures be available to prove this theory.

The gas refrigerator does enjoy these advantages. It is cheaper to operate, according to all present indications. It is automatic. It is noiseless. The principle is ingenious and paradoxical. Not only does the machine maintain a refrigerating temperature without resource to and dependence on moving parts but it also produces this refrigerating temperature, or lack of heat, with heat. To the average mind this is an anomalous and contradictory theory, one that is fascinating to behold. To capitalize on this is to show shrewd merchandising judgment, as has been proved by the history of products that are comparable.

A very significant feature of the status of gas refrigeration is the interest that has been shown by the gas industry. The crowds at the refrigeration exhibits at the recent Atlantic City convention proved that the executives are interested in this machine that promises to produce more revenue. Previous to the convention the gas industry was more or less apathetic toward the refrigerator. So much discussion had proved futile and so many hopes had been raised that did not materialize, that the very name refrigerator fostered the attitude, "Wait until a machine is perfected, and then talk."

However, this attitude has been changed to one of interest, and the executives are sold apparently on the idea that the gas refrigerator will be a beneficial load builder, although only a small consumption of gas is involved. It is a case of the little things being important, for the approximate 1,500 cubic foot consumption of gas monthly will often turn an unprofitable customer into a profitable

one. The family whose monthly consumption averages 1,500 cubic feet will become a user of 3,000 cubic feet, and the family which has been using 2,500 cubic feet will in turn use 4,000 cubic feet.

There is another important factor, and one that has been overlooked apparently. The electric toaster has probably done more to force to visible recognition electric service than any other one appliance. Placed on the breakfast table, the members of the family cannot help but notice that they are receiving utility service, when they need it and in the quantity they desire. The gas refrigerator, because of its anomalous and contradictory principle, will do much the same thing. The family will be interested in the machine, because from heat they receive what heat is supposed to destroy. The man of the house boasts of his gas-fired house heating boiler, because it represents the last word in convenience. Likewise, the family will boast of their refrigerator because to the uninitiated mind the principle will always be fascinating.

One often hears a gas man say the public is too disinterested in the gas industry, that they take gas service as a prosaic service that performs its job. What could be more dramatic to the public than the operation of a gas refrigerator?

Once interested in gas as a fuel for their refrigerator, the public would be interested in gas for other domestic purposes. In this way a great deal of the sales resistance to gas water heaters and other gas appliances would be broken down, with the result that the all-gas home would be a step nearer.

It might also be added that gas companies should regard the refrigeration business from another angle than that of possible revenue. Every gas company wants to render its customers every kind of service that gas can perform advantageously. If the gas refrigerator is an efficient and practical machine, the gas companies should see that their customers are provided with it.

In the merchandising of the gas refrigerator four factors enter in, the identical four factors that enter into the merchandising of any article. They are: Production, distribution, sales, and service. At present gas refrigerators are in production. That is, several companies have produced enough machines to furnish gas companies with samples, and, in a few cases, gas companies have machines for sale.

The distribution factor is not entirely worked out at present, but the trend is toward the gas companies as agents. Of course, the manufacturers will utilize all channels of distribution, such as special agents, etc., but the trend toward selling through gas companies is marked.

The sales factor is not yet ready for consideration, and the service factor will be non-existent. Because of the lack of moving parts, etc., there will be no necessity for servicing the gas machines. At least the service problems will be nothing as compared to the service problems of the electric compression machines.

In making a survey of the gas refrigeration field, it is important to take into consideration certain facts about the electric machine. Contradictory figures concerning the actual number of electric compression machines installed throw a veil over the true condition of the field, but a fairly safe estimate, from an authoritative source, is that there are approximately five hundred thousand electric machines in use today. The sale of half a million refrigerators has opened the field of mechanical refrigeration, and yet the road is not going to be an easy one for the gas device. It must be remembered that several quality electric machines, some that will offer the stiffest competition to the gas machine, are in the hands of powerful financial interests. These interests will not be content to permit the gas machine to enter the market without a struggle.

The obvious result will be a contest of merchandising wits, with the gas units having the advantage from the point of ease of control, length of life, operating cost, and lack of noise. However, both the gas and electric machines will sell at about the same price. This is a broad statement, but, with few exceptions, it will be true. The important thing is that the gas machine may have to fight systematic and periodic price cutting by the manufacturers of electric machines. The history of various products points the way to just such a price-cutting policy, and the manufacturers of gas machines together with the gas companies will do well to fortify themselves against such tactics.

A study of an electrical trade magazine reveals many pages of advertisements extolling electric refrigerators, parts, etc. A perusal of the gas trade papers reveals but one or two advertisements. This means that the electric machine is already on the way to the goal. Thus far they have enjoyed a monopoly. The gas machine will be forced to compete with an already fairly well-established article, but at the same time it will be able to capitalize on the work the electric machine has done in opening up the entire field of mechanical refrigeration, as has been pointed out.

One of the most important developments of the mechanical refrigeration field is the possibility that the electric manufacturers will make an electrical absorption machine. Where electricity is cheap, electrically heated machines can be operated at a reasonable cost, and the future of the gas machine depends on selling the public the idea of gas operation before a competing electric machine is developed. When the electric absorption machine is perfected, four of the sales and merchandising advantages of the gas machine, namely, noise, length of life, cost of operation, and service, will be equalized.

Any gas-operated refrigerator can be operated electrically, and since this type of business will be practically one hundred per cent load factor, it represents a very attractive field. As in the past, electric rates could be made low enough to compete with the gas machine, and the gas industry must show unusual activity and intelligence in pushing their machines speedily.

Much has been said about the gas companies not being interested in the gas refrigerator, especially since they do not seem anxious to stock the machines now offered for sale. While this may be true to some extent, the sales orders received by one manufacturer do not bear this out, nor do the experiences of some of the other manufacturers. Gas companies have ordered machines from the different manufacturers who are in production or about to enter into production. The important thing is to get the manufacturers and gas companies together in a concerted and united effort to merchandise the idea of gas refrigeration. If anything, too much destructive criticism has been heard about the gas industry not showing a willingness to handle refrigeration.

In the preparation of these data certain questions were asked of the manufacturers of gas-fired refrigerators. The fact that most of the questions could not be answered proves that refrigeration is still in the embryonic stage.

It was impossible to determine the number of machines already sold to gas companies and to customers, outside of the Chicago, Ill., territory where a machine has been sold for several years. None of the manufacturers had developed any actual sales and merchandising program, aside from the fact that "they are going to advertise and sell their machine actively."

One company reports that by June 1, 1927, it will have produced 25,000 units. This company also reports that it has orders for one thousand machines from six large gas companies, and that altogether it has orders for machines from 500 gas companies.

It would be difficult to list the number of companies interested in manufacturing gas refrigerators, as some are actively engaged in production work, while others are merely working on laboratory models. However, the following was derived from interviews and correspondence:

One company will shortly place on the market a gas-fired compression machine. Another company is interested, but is waiting the development of other machines. Still another company reports that it will be in production the latter part of the winter. A fourth company has completed development work on an oil or gas-fired continuous absorption machine, in which no cooling water will be needed. This company reports it is "now going into production." A fifth company says it is "merely interested in the development of gas refrigerators."

Another company says it has been actively engaged in selling gas refrigerators for the past four or five months, and during this time has sold units to gas companies in the Middle West and Eastern States. In reality, this company has sold machines during the past two years. In the opinion of this manufacturer, the electric machine has opened up the field for the gas machine, but the absorption type of machine will become the dominating machine on the market. They are quoted as follows:

"The prices of the units are competitive with electric compression machines based on the size of the cabinet to be refrigerated. We believe there is a decided possibility of electric manufacturers making an electric absorption refrigerator. At least three of the better known companies are actively engaged in investigating the possibilities of this type of unit. Our present production is partially devoted to electrically heated absorption units. We have sold approximately 250 units to customers, including both gas and electrically heated units. Practically all of these units are installed on consumers' ice boxes. In many cases, however, we recommend the purchase of a new box for use with our unit."

"Our merchandising plans for 1927 are to push actively the sale of gas refrigerating units with the co-operation of the gas companies, selling through gas companies wherever possible."

One of the largest manufacturers of household electrical refrigeration machines has been developing in conjunction with another large manufacturer a gas machine which promises to be revolutionary in character. This machine will be capable of refrigerating anything from the smallest household size to the largest commercial size. It differs from the ordinary gas machine, inasmuch as no chemicals of any kind are employed. The machine will have no moving parts, except an automatic control. A number of machines are being tried out at various points in the United States, and the manufacturer claims they are operating perfectly.

Another manufacturer reports as follows:

"Our merchandising plans for 1927 are still undecided further than that we are now distributing one hundred sample machines to as many gas companies for testing purposes. It is our desire to make the gas companies our selling agents. We hope to have two or three thousand machines in the hands of gas companies before the end of the summer."

Another manufacturer has sold several units in the Middle West and in the East. The sales, though by no means large, are sufficient to maintain operations of the present manufacturing equipment for several months, and now the company is engaged in improving production means and methods.

The following letter indicates what can be done with the gas refrigerator:

"The first ice machine was sold and installed December, 1921, is still in operation and giving excellent satisfaction.

"Since that time the number of installations has materially increased each year

over the preceding year until during 1926 the total gas consumption from refrigeration in the city amounted to approximately 14,000,000 cu.ft.

"The majority of these installations are in residences, one machine refrigerating one box only. There are a number of apartment houses, also some commercial installations.

"In the apartment house installations we refrigerate and make ice in up to six refrigerators from the one machine. The temperature in each refrigerator is individually controlled, also any one or any number of the six refrigerators can be closed off and not affect the operation of those which are not disconnected. In buildings of more than six apartments we install a machine for each six refrigerators.

"Our oldest installation of that type has been in operation for about three and a half years, having been installed May, 1923.

"The service problem which is such a large factor in the continued operation of the electric compression machines, our experience has shown us, is practically done away with in the operation of the absorption type of refrigerating equipment.

"Our prices are higher than competitive electric machines, but can be materially reduced with proper manufacturing equipment and any reasonable quantity production.

"In going into this proposition it was recognized that a gas absorption machine, in order to meet electric competition, must automatically and continuously perform equally as well or better in every way than competitive machines, and our automatic features were perfected and thoroughly tested in the factory before a machine was sold to a customer; this has resulted in a minimum of trouble on the customer's premises and has entirely avoided the removal of machines after once installed.

"We are manufacturing the machine in three sizes which we rate at 125, 250 and 500 lbs. of refrigeration per 24 hours.

"We guarantee to give him a constant temperature lower than he can get with ice; also to freeze his ice cubes in five hours (the actual freezing time is about three and a half hours). All residential and apartment house refrigerators are supplied with ice trays for freezing cubes."

In conclusion, the gas machine will enjoy these merchandising advantages over the electric machine: No noise, no service, indefinite life, and cheaper operation. The job ahead is to sell—to push the refrigerator over the threshold.

R. B. Brown

© Blank & Stoller

A. B. Lathrop

A. B. LATHROP has been made chairman of the board of the American Light and Traction Company, of New York, and R. B. BROWN has been made President. Mr. Lathrop was formerly President of the company, and Mr. Brown was President of the Milwaukee Gas Light Company, Milwaukee, Wisc.

Mr. Brown was President of the American Gas Association in 1923-24 and has also been a member of the Board of Directors of the Association since 1919.

He was born in 1875 at Roselle, N. J. He has the degree of M.E. from Lehigh University. Entering the gas industry as a cadet engineer for the East River Gas Company, New York, N. Y., he later went with the Newark, N. J., Gas Company. After being with the American Gas Company as superintendent, he entered the employ of the Milwaukee Gas Light Company as engineer, and became, in turn, general manager, vice-president, and President. He has been President of the Wisconsin Gas Association, and vice-president of the American Gas Institute.

BINDERS holding 12 copies of the A. G. A. Monthly cost $1.50. The binders are of the post style, and are stamped in gold. A limited supply is available.

National Magazine Speaks of Laboratory

THE *Nation's Business* comments on the Testing Laboratory in the January, 1927, issue, as follows:

"A higher plane of dependability is attained by the gas industry through agreement of members of the American Gas Association to stop the sale of all gas ranges and flexible tubing that do not bear the approved seal of the Association's testing laboratory. For some time it has been possible to buy household appliances approved by organizations outside the trade—Good Housekeeping Institute, for instance, but the self-propelled action of the industry testifies to an active concern to put its own house in better order.

"At a convention in Atlantic City, executives of the gas producing companies, pledging their companies to 'combat inferior and unapproved appliances,' resolved, among other things, that:

"'It is detrimental to the best interests of the public and the gas industry that appliances or tubing not qualifying for American Gas Association standards be made or marketed, and we deplore and disapprove any such practice. . . .'

"Of the testing laboratory and its purposes, Alexander Forward, managing director of the Association, said:

"'Nothing proves more conclusively the gas industry's desire to excel in the field of public service than the laboratory's foundation. An impartial group of men with broad experience in the utilization end of the gas business will guide it. The testing staff employed at Cleveland is trained not only in the scientific aspects of the appliance testing business, but in the practical as well. Leading appliance engineers prepare the requirements for construction and performance, and those standards have the approval of interested governmental bodies.'

"By such deeds are codes of ethics practiced."

Figures Prove Large Growth in Gas Sales

THE manufactured gas industry has had its greatest growth in the last quarter century, despite the loss of the lighting business, according to the following figures made public by the American Gas Association.

In 1901 when the use of gas for lighting was at its height, the gas sold was sufficient to bake one-pound loaves of bread that would reach a distance of 19,247,227 miles. In 1925 the gas sold would bake almost four times as much bread, or enough to reach 79,924,242 miles. These figures were determined by taking 550 B.t.u. as the average heating value of the gas sold, and the average length of a loaf of bread as twelve inches.

The increase in gas sales in the years 1901 to 1925 is largely due to the use of gas in industrial heating processes. Today gas is used principally for heat, both in the home and in industry. The loss of lighting has been compensated many times over by the large-scale heating operations in factories and by the use of gas for cooking and for heating homes.

During this period from 1901 to 1925, gas sales increased 400 per cent, or from 101,000,000,000 cubic feet to 422,000,000,000 cubic feet. The increase in the sales of gas in 1925 over 1901 would be sufficient to boil two three-minute eggs for breakfast for every man, woman, and child in the United States for 1008 days, or nearly three years.

EASTERN STATES GAS CONFERENCE, APRIL 7 AND 8

THE fifth annual Eastern States Gas Conference will be held at the Bellevue-Stratford Hotel, Philadelphia, Pa., Thursday and Friday, April 7 and 8. Herbert H. Ganser, vice-president of the Counties Gas & Electric Company, Norristown, Pa., is chairman of the program committee. His committee has already had several meetings and the interesting program that has been outlined will contain much that will be of interest to every gas man.

Further announcements of the Conference will be given in the March issue of The Monthly.

In Memoriam

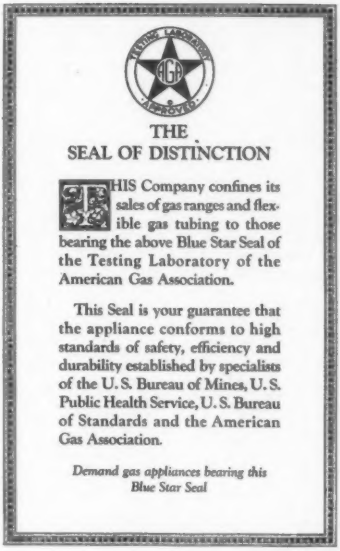
Mrs. Samuel T. Bodine, Philadelphia, Pa.
Richmond Edward Slade, Provincetown, Mass.

The Laboratory Is a Sales Feature

Gas Companies Will Do Well to Base Their Merchandizing Policy on the Approval Seal

By C. F. SHEPARD
Central Hudson Gas & Electric Corporation

THE oft-quoted Biblical admonition not to hide one's light under a bushel may well be heeded by gas companies, if they hope to capitalize on the value of the American Gas Association Testing Laboratory. Without doubt, the founding of this laboratory was one of the most progressive steps taken by the Association during the past several years. Yet its potentiality for increasing the comfort and safety of the American home will be largely vitiated if we of the industry do not get its full significance across to our public through adequate publicity.


THE
SEAL OF DISTINCTION
THIS Company confines its sales of gas ranges and flexible gas tubing to those bearing the above Blue Star Seal of the Testing Laboratory of the American Gas Association.
This Seal is your guarantee that the appliance conforms to high standards of safety, efficiency and durability established by specialists of the U. S. Bureau of Mines, U. S. Public Health Service, U. S. Bureau of Standards and the American Gas Association.
Demand gas appliances bearing this Blue Star Seal

Reproduction of window display card telling of the Laboratory. This, in addition to mats for newspaper advertisements and an envelope stuffer are now being distributed by the Association

Realizing the importance of getting this message across to its consumers, the Central Hudson Gas & Electric Corporation is putting into effect an advertising schedule designed to acquaint practically every resident of the Central Hudson Valley with the work of the laboratory. As a first step, we have prepared a series of four newspaper advertisements, explaining the purpose of the laboratory and how it functions to assist the public in securing the safest and most efficient types of appliances. Throughout these advertisements continued emphasis is placed on the Blue Star approval seal as the symbol of assurance to the public that every appliance on which it is found has been tested and has fulfilled all of the A. G. A. specifications. The public is cautioned to look for this seal and to regard it as the mark of a reliable appliance. As a result, practically every gas consumer on our mains will be informed of this important activity of the American Gas Association.

Another, and perhaps equally effective, medium of selling the laboratory to our public will be an illustrated news article in the February issue of our monthly house organ, known as *Central Hudson Proggress*. This pamphlet is mailed to every home using either branch of the utility service of our company.

Although the publicity will doubtless serve to acquaint our consumers with the work of the laboratory, we plan to keep the approval seal idea unceasingly before our public through every means at our command. Hereafter, wherever possible, every gas appliance advertisement published in the papers throughout our territory and many direct mailing pieces also will bear a cut of the approval seal and a statement that the particular appliance advertised bears the Laboratory approval.

Our Home Service Department will play its part in popularizing the seal and what it stands for. Frequent references

(Continued on page 112)

Team Work Fosters an Official Welcome

Utility Company of Elmira, N. Y., Co-operates with Commerce Association in Welcoming New Citizens of City

EDITOR'S NOTE

UNDER an effective system worked out by Frederick H. Hill, vice-president and general manager of the Elmira Water, Light and Railway Company, and the manager of the local association of commerce, strangers in Elmira, N. Y., are made to feel that their presence is much desired and that the city really welcomes them into its community life. This result is achieved through the mailing of personal letters by both Mr. Hill and the manager of the commerce body.

THE Elmira Water, Light and Railway Company, of Elmira, N. Y., has found that it is profitable to welcome strangers to the city. By combining the efforts of the utility company with those of the local association of commerce, a cordial greeting is extended to the new citizen, and his reaction toward the city and toward the public utility is bound to be favorable. This public relations stimulus was adopted last July.

The first step in the effort to create a friendly spirit is the letter sent by F. H. Hill, vice-president and general manager of the Water, Light and Railway Company. This is followed by a letter from the manager of the Elmira Association of Commerce.

Mr. Hill's letter which is sent as soon as the meter department informs him that the new family is receiving service, is as follows:

"We are glad to welcome you to Elmira and to have you as a customer. We hope that you will find Elmira a good place in which to live and work and prosper.

"We try to give all our customers good service at all times. We wish our service to be satisfactory to you, and if at any time it is not, please let us know promptly.

"We welcome complaints and suggestions that will help us give better service."

Mr. Hill then turns the name and address of the newcomer over to the commerce association.

The results of the plan are shown by reading the many letters of appreciation sent to the offices in response to the letters to newcomers.

Many of the newcomers make use of the company and association files and references in getting properly located in their new home city and ever after view the association and utility as friends instead of remote business organizations without individual appeal.

In addition to sending out the letters, the utility company sends appliance adjusters to the homes of the new citizens to make sure that the gas service is satisfactory.

Recently the Water, Light and Railway Company has turned the list of newcomers over to the local church organizations, who visit the people in behalf of their churches.

New office building of the Rochester Gas & Electric Corp., Rochester, N. Y.

A Textbook of American Gas Practice

Review of Professor Morgan's Book "Manufactured Gas," Which is First of Two Volumes Dealing with Industry in This Country

By A. GORDON KING
Service Engineer, American Gas Association

J. J. Morgan

IT is no small pleasure to review "Manufactured Gas" by Professor Jerome J. Morgan of Columbia University, New York. It bears the sub-title "A Textbook of American Practice" and is the first of two volumes; the second is still to be written and will treat of distribution, utilization, and some business aspects.

Volume one deals with production and was originally distributed in pamphlet form as a basis for instruction in a course in which nearly 1000 gas company employees are actively participating.

In its present form, this book contains 500 pages and 24 chapters in which 250 illustrations are interspersed. They consist of strikingly clear tabulations, diagrams, and photographs. Typewritten manuscript has been reduced and reproduced by a new process in place of ordinary typographical methods.

Passing quickly from the early history of the industry, the author wisely proceeds to discuss the physical characteristics of gases, fuel gases and their composition, as well as the components of fuel gases before he asks the reader and student to consider actual gas making.

Actual production of manufactured gas is so completely and inherently based on the fundamental laws of chemistry and physics that when these are mastered their application to the gas industry becomes not only logical but relatively easy. Coals and coal carbonization are discussed at length in Chapters 6 and 7, and here again we note the fundamental economics and controlling factors are adequately covered. In addition to detailed descriptions of carbonizing equipment, we find excellent illustrations and text that furnish a clear picture of coal handling equipment, as well as a chapter covering boilers and steam raising.

Blue gas, carbureted water gas and oil gas manufacture are described clearly and explicitly, and full details of the latest modifications and improvements in these processes are included.

Three chapters, 18, 19, and 20 are devoted to all essential purification, using the word in its broadest sense. Low temperature carbonization and complete gasification conclude the technical chapters; the last two very appropriately deal with the elements of plant design and the more important problems and developments in the art of gas manufacture to be met in the future.

This book meets a long-felt and oft-expressed demand; it has many uses, the first being the purpose for which it was written: *i.e.*, as text material for the Home Study Course on Manufactured Gas at Columbia University. Every gas man, from works operator to executive and including those who come in contact with the public, can study it with advantage. It is authoritative and timely; it is probably the first compilation under one cover that reviews the industry from its inception and its peculiar technical problems, and brings them down to date.

In the opinion of this reviewer, Professor Morgan should be congratulated on carrying successfully to completion a self-imposed task that should prove of the greatest value to a rapidly growing industry and one, moreover, that is built on the soundest technical and economic foundations.

TIDE OF MEN AND AFFAIRS

The Walton Clark Medal

The Franklin Institute Honors Walton Clark

DR. WALTON CLARK was honored on Dec. 21 by the Franklin Institute and a gathering of distinguished Philadelphians, when the first award of the Walton Clark Medal, endowed by The United Gas Improvement Company, was made to Dr. Clark, Consulting Engineer of the U. G. I. and a former vice-president of the company.

The presentation by W. C. L. Eglin, president of the Institute, to the former president, who served 17 years in the office, was in the presence of many men who had worked with Dr. Clark and had personal knowledge of his important contribution to the gas industry in which he has been a prominent factor for many years.

The Franklin Institute, in making the award, made the following statement:

"In consideration of his life work in the American gas industry and his distinguished and outstanding contributions to technical progress in that industry, as a pioneer in the association of chemical and physical laboratories with the developmental work of the gas companies, by his participation through interest, suggestion, and advice in the invention of a process for the complete gasification of coal, in the development of processes for operating water gas sets, and in the institution of beneficial modifications of water gas apparatus, by numerous articles contributed to the technical press, and by his unfailing interest in the educational progress and the all around development of the younger men who were fortunate enough to be associated with him, The Franklin Institute awards the first medal bearing his name and established in his honor, to Dr. Walton Clark, of Philadelphia, Pennsylvania."

Directors of The United Gas Improvement Company voted on March 10, last, to endow the medal. It is to be awarded each year for original and notable work in the gas industry.

G. D. YEATON has resigned from the position of industrial engineer for the Southern Gas and Power Corporation to join the Industrial Appliance Company of New England.

FRED SCHROEDER, cost and statistical clerk, Central Union Gas Company, New York, N. Y., is now with the Consolidated Gas Company, of New York, N. Y.

A. J. GALLAHER, who has been in charge of the house heating department of the Laclede Gas Light Company, St. Louis, Mo., is now President of the Gallaher Boiler Company, St. Louis, Mo.

EDWARD CROFTON, superintendent's assistant, Consolidated Gas Company of New York, N. Y., is now with the New York and Queens Gas Company, Flushing, L. I.

WILLIAM H. EARLE, formerly superintendent of gas manufacturing department, of the Rochester, N. Y., Gas & Electric Corporation, has resigned to affiliate himself with the Koppers Construction Company, Pittsburgh, Pa. At a farewell dinner Robert M. Searle, President of the Rochester utility, presented to Mr. Earle on behalf of the department employees a watch, chain and knife. Alexander Beebee, formerly assistant superintendent, gas manufacturing department, has been selected to succeed Mr. Earle.

H. R. Sterrett

H. R. STERRETT, manager of the Des Moines Gas Company, Des Moines, Ia., has been appointed to represent the gas industry of the state on the advisory board on co-operation between Iowa industries and the Iowa State College. Dean Marston of the college is chairman of the committee. The board, on which are representatives of many Iowa industries, will endeavor to promote a closer relationship between the educational and business interests of the state.

Mr. Sterrett was also recently elected President of the manufacturers' bureau of the Des Moines Chamber of Commerce.

W. H. Taylor

WILLIAM H. TAYLOR has been appointed a vice-president of The United Gas Improvement Company, an additional position having been created, according to announcement made by Arthur W. Thompson, President of the company. He will assume his new duties February 1.

Mr. Taylor is 47 years old and has had long experience in public utility work. He has been connected with U. G. I. properties for more than 23 years. Mr. Taylor has been operating head of U. G. I. plants in Gloversville, N. Y., Charleston, S. C., and Omaha, Nebraska.

Since 1922 Mr. Taylor has been vice-president and general manager of the Georgia Railway & Power Company, with headquarters in Atlanta. He is a graduate of Stevens Institute of Technology and an engineer by profession. He began his active career in 1903 as a constructor with the U. G. I. engineering forces. He has risen step by step through the engineering, management and construction departments to the positions of vice-president and general manager of outlying properties.

"Mr. Taylor receives recognition of his ability and accomplishments in being brought to headquarters of The United Gas Improvement Company," said President Thompson. "His offices will be in the central U. G. I. building at Broad and Arch streets."

H. S. LOCKLEY, superintendent transportation, Westchester Lighting Company, Yonkers, N. Y., is now in the transportation department of the Consolidated Gas Company of New York, N. Y.

MARTIN J. PREZZANO, of the purchasing department of the Central Union Gas Company, is now connected with the Westchester Lighting Company, Yonkers, N. Y.

EDWARD D. BETTS, cadet engineer, Public Service Electric & Gas Company, Trenton, N. J., has been transferred to the Harrison, N. J., plant of the same company.

RALPH BLOOMSBURG, formerly chief safety engineer of the Utilities Mutual Insurance Company, is now with the Davis System of Emergency Equipment, and will have charge of sales and service in the New England, North Atlantic states, Ohio and West Virgina.

ROBERT O. CURRIE, assistant superintendent of transportation, Consolidated Gas Company of New York, N. Y., is now with the Westchester Lighting Company, Yonkers, N. Y.

FREDERICK H. HILL, vice-president and general manager of the Elmira Water, Light and Railway Company, Elmira, N. Y., has been elected President of the local Association of Commerce.

PIERRE PLANTIGNA, President of the Gas Machinery Company, Cleveland, Ohio, is in Europe on a two months' trip.

WILSON F. SWAZE, manager of the Bucks County Public Service Company, Newton, Pa., has accepted a position as general manager of the Eastern properties of the W. F. Foshay Company, of Minneapolis, Minn., in Pennsylvania and New Jersey.

F. A. SCHAEFER, gas superintendent, Goshen-Warsaw district, Interstate Public Service Company, Goshen, Ind., is now local manager of the Sumter Gas and Power Company, Sumter, S. C.

ALLEN D. ADDICKS is now connected with the Surface Combustion Company, of New York, N. Y. He was at one time industrial fuel representative with the Public Service Electric & Gas Co., Newark, N. J.

WALTER B. TULLY, cadet engineer, the Public Service Electric and Gas Co., Newark, N. J., has resigned to become associated with the Camden Coke Co., Camden, N. J.

MISS LENA PALMER, who has been home service director at the Newburgh office of the Central Hudson Gas & Electric Company, Poughkeepsie, N. Y., has resigned to be married. Miss Margaret Oliphant, of Trenton, N. J., has been appointed to fill Miss Palmer's position. Miss Oliphant received her home service education at Columbia University, and has been teaching home economics at the Dow School in Briarcliff Manor, N. Y.

C. R. Stahl

C. R. STAHL, formerly assistant general manager of the People's Light Company, Davenport, Ia., has resigned his position with that utility to become general manager of the Panhandle Power & Light Company. This organization is the new property of the United Light & Power Company syndicate in the Panhandle oil region of Texas. The announcement of Mr. Stahl's promotion was made at the United Light headquarters. Mr. Stahl has been affiliated with the Davenport company since 1915, when he entered its employ in a minor capacity, advancing in the ranks consistently until he became assistant general manager. Mr. Stahl is a graduate of Purdue University.

ROBERT I. THOMPSON, manager Durham property, Carolina Power & Light Company, Durham, N. C., has become associated with the Pavilion Natural Gas Company, Pavilion, N. Y.

WILLIAM D. BOONE, formerly secretary of the Midland Utilities Company, Chicago, Ill., is now connected with the Central and Southwest Utilities Company, Dallas, Tex.

W. R. LACEY, commercial manager of the Milwaukee Gas Light Company, Milwaukee, Wis., has resigned to become vice-president of the Home Incinerator Company of the same city. He will be succeeded by R. O. Jasperson, formerly with the Central Hudson Gas & Electric Co., Poughkeepsie, N. Y.

D. W. CLANTON, formerly safety engineer of the Georgia Railway and Power Company, is now connected with the Davis System of Emergency Equipment. He will have headquarters in Atlanta, Ga., and will have charge of sales and service in the Southern states.

ROBERT H. KNOWLTON, assistant to vice-president, the United Gas Improvement Company, Philadelphia, Pa., is now connected with the Connecticut Electric Service Company, Hartford, Conn.

FRANK ZOTTI, superintendent's assistant, Central Union Gas Company, New York, N. Y., is now located at the Astoria Light Heat and Power Co., Astoria, N. Y.

W. K. HARRINGTON, superintendent gas meter repair shop, Westchester Lighting Company, Yonkers, N. Y., is now with the Consolidated Gas Company of New York, N. Y.

REID A. CAMERON has resigned his position as Chicago district manager for the Lovekin Water Heater Company to become general sales manager for the Pittsburgh Water Heater Company. He will have headquarters in Chicago.

GEORGE S. HAWLEY, President of the Bridgeport Gas Light Company, Bridgeport, Conn., has been reelected President of the Bridgeport Manufacturers Association for the third term.

WALTER M. BERRY, executive engineer for the California Gas Research Council for the past three years, and formerly gas engineer for the U. S. Bureau of Standards, Washington, D. C., has entered the consulting engineering field. He will specialize in problems of gas utilization. His offices will be at 810 South Flower Street, Los Angeles, Calif.

F. E. NEWBERRY, who has been manager of the Jersey Central Power and Light Co., Belmar, N. J., has been appointed New York manager for the Equitable Meter and Manufacturing Company of Pittsburgh, Pa.

COMPANY CHANGES

THE LOUISIANA ELECTRIC CO., INC., Lake Charles, La., is now known as the Gulf States Utilities Co.

THE OWOSSO GAS LIGHT CO., of Owosso, Mich., and the Marshall Gas Light Co., of Marshall, Mich., are now the Michigan Federated Utilities.

THE LEBANON GAS & FUEL CO., Lebanon, Pa., has changed its name to the Lebanon Valley Gas Co.

THE LINCOLN WATER & LIGHT CO., Lincoln, Ill., is now known as the Illinois Public Utility Co.

THE NEW GAS LIGHT CO., Janesville, Wis., is now part of the Wisconsin Power & Light Company system.

THE NAME of the Asheville Power & Light Co., Asheville, N. C., has been changed to the Carolina Power & Light Co.

THE FAIRBURY GAS CO., Fairbury, Nebraska, is now the Fairbury Gas & Electric Co.

THE CITIZENS GAS & FUEL CO., Terre Haut, Ind., is now known as the Indiana Gas Utilities Co.

THE WEST HAMMOND GAS & ELECTRIC CO., Calumet City, Ill., is now the Calumet City Public Service Co.

THE CITIZENS GAS LIGHT CO., Jackson, Tenn., is now known as the Jackson Railroad & Light Co.

ROTARY METER COMPANY, 52 Vanderbilt Avenue, New York, N. Y., has changed its mailing address to c/o Pulverizing Machinery Co., 30 Church Street, New York, N. Y.

PADUCAH ELECTRIC CO., INC., is now the Kentucky Utilities Co., Paducah, Ky.

BRYANT HEATER & MFG. CO., located at 952 East 72nd Street, Cleveland, Ohio, is now at 17825 St. Clair Avenue, Cleveland, Ohio.

DEFIANCE MANUFACTURING CO., Chicago, Ill., which has been at 15-17 Elser Terrace, Rochester, N. Y., is now located in Orange, N. J.

PACIFIC METER WORKS, formerly of 1123 Harrison Street, San Francisco, Calif., is now at 495 Eleventh Street, San Francisco, Calif.

HAVE YOUR CUSTOMERS READ THIS?

GAS in the Service of Man, an interesting six page phamplet that calls attention to the important part gas plays in the everyday existence of the average individual, has a message for every user of gas.

A limited supply is available at five dollars a thousand. Order now to insure delivery.

Affiliated Association Activities

New England Gas Association

THIS Association will hold its first annual meeting Wednesday and Thursday, February 23rd and 24th, 1927, and the inaugural program arranged is as noteworthy as the occasion. There will be two sessions daily of two hours each, starting at 10 A.M. and 2 P.M. Each session will be intensive, interesting and informative.

The meeting will be opened with the address of the President, F. C. Freeman, which, judging from his past achievements, should not be missed. The treasurer, F. D. Cadwallader and the acting secretary, E. A. Taylor, will present their reports. The Governor's Cup of the Sales Division will be presented by vice-president, William Gould, to the gas company leading in sales. An address "Merchandising and Advertising," by Roy Simpson, advertising and sales manager of the Liggett Stores, will close the morning session.

The afternoon session on Wednesday will be given over to the Sales and Industrial Divisions when two addresses will be delivered: "Sales Department Personnel," by John A. Keane, sales manager, Hambleton & Co., Inc.; and "Process Steam," by E. W. Berchtold, sales engineer, Boston Consolidated Gas Company.

In the evening there will be a dinner with entertainment followed by dancing.

An address "Fuels-Research and Future Treatment," by Professor John T. Ward or Professor Robert T. Haslam, Massachusetts Institute of Technology, will open the Thursday morning, February 24th, session. The remainder of the morning will be devoted to discussion and questions from the Question Box.

On Thursday afternoon, J. P. Leinroth, industrial fuel representative, Public Service Electric & Gas Company, Newark, N. J., will deliver an address on "Factors Other Than Fuel Costs Which Sell Industrial Gas," which will be followed by one on "Broader Merchandising Co-operation," by Hall M. Henry, vice-president, Gas Utilities, Inc., Columbus, Ohio. There will be an exhibition of gas refrigerators in connection with the meeting. The following companies have signified their intention of participating: The National Automatic Refrigerator Co., The Electrolux Servel Corporation, and The Gas Refrigerator Corporation. This exhibit will be so located as to attract the general public in addition to the gas men.

The Entertainment Committee urges the attendance of the ladies. E. H. Bauer, chairman, states it is planned to occupy interestingly the time of the ladies during the two days. The Entertainment Committee personnel assures a pleasant stay in Worcester for everyone attending this meeting. It consists of E. H. Bauer, chairman, A. H. Scott, M. E. Abbott, C. C. Curtis, R. L. Fletcher, F. A. Woodhead, C. S. Hilton, and J. F. Power.

Wisconsin Utilities Association

THE 1927 meeting of the Gas Section of this Association will convene at Racine, Wisconsin, February 24 and 25 with a program that promises a great deal. The program includes a report on the Gas Fellowship at the University of Wisconsin by Professor O. L. Kowalke and also the following papers: "Holder Heating" by H. E. Sweet, Wisconsin Power & Light Co.; "Bituminous Coal for Manufacture of Water Gas" by Carl Hume, Wisconsin Power & Light Company; "What the National Technical Section is Doing" by W. C. Beckjord, chairman A. G. A. Technical Section; "Liquid Purification," J. E. Newton, Madison Gas & Electric Co.; "Dehydration" by Louis Stein, Northern States Power Co.; "Corrosion" by I. R. McCall, Detroit Edison Co.; "Gas for Industrial Use and House Heating" by A. Schultz, Milwaukee Gas Light Co., and "Distribution Problems" by W. R. Kemen, Milwaukee Gas Light Co. The program was arranged by the Chairman of the Section, George E. Wagner. Local arrangements are in charge of a committee headed by S. B. Sherman as chairman, assisted by W. A. Boetcher and W. L. Haight.

The following men have been appointed a Nominating Committee for the Gas Section of the Wisconsin Utilities Association to nominate a chairman and vice-chairman for the ensuing year: M. H. Frank, Chairman, Wisconsin Power and Light Company, Fond du Lac, Wis.; Louis Stein, Northern States Power Co., Minneapolis, Minn.; Allen C. Davey, Menominee & Marinette Light & Traction Company, Marinette, Wis.

Southwestern Public Service Association

THE Southwestern Public Service Association will meet jointly with the Southwestern Geographic Division, N. E. L. A., at New Orleans, April 26-29. This will bring together representatives of practically all the utility companies, electric, electric railway, and gas, in the five states of Texas, Oklahoma, Arkan-

OFFICERS OF ASSOCIATION SECRETARIES' ORGANIZATION

When the Public Utility Association Secretaries met for their fifth annual conference at the St. Charles Hotel, New Orleans, La., on December 9 and 10, the following officers were elected: President, John N. Cadby, secretary, Wisconsin Utilities Association (right); secretary, Horace M. Davis, director, Committee on Public Utility Information, Lincoln, Nebraska (left).

sas, Louisiana, and Mississippi. At the general sessions there will be general discussions of subjects of interest to the entire industry, while sectional meetings will be provided for all branches of the industry. The Gas Section is now undertaking some interesting investigations which will be discussed at the sectional meetings. Details of the program are being brought together by the Committee, consisting of Harold E. Borton, H. B. Flowers, S. J. Ballinger, and E. N. Willis.

Pennsylvania Gas Association

SINCE the formation of the Eastern States Gas Conference, the Pennsylvania Gas Association has conducted its annual meeting at a luncheon held during the two days of the Conference. This year a full day's meeting will be held on the day preceding the opening of the Conference. The meeting will start in the morning of April 6, 1927, at the Hotel Bellevue-Stratford in Philadelphia and it is expected that association business will require the entire time until the luncheon, which will start at 12:30. Plans are being made to present an interesting sketch immediately after the luncheon.

The afternoon session will be given over to the presentation of two papers and a thorough discussion of these papers. It is expected one will cover the planning and organization of a new business campaign. The other paper will treat such items of service to customers as: handling of orders in the meter shop; leeway given fitters on premises; fitters taking applications; fitters leaving customers satisfied; fitters selling extra services; keeping drips clear and anticipating leaks on pipe line stoppages.

The final program will be published in a subsequent issue of the Monthly.

The Program Committee consists of Wallace G. Murfit, chairman; A. C. Taylor, president of the Association; George L. Cullen, secretary.

Empire State Gas and Electric Association

THE annual meeting of the Gas Section of this Association will be held at New York City about the middle of March. J. E. Cooper, Utica Gas and Electric Company, Utica, N. Y., chairman of the section, has announced that a most interesting program will be presented.

The following are a few of the subjects to be covered: design and construction of high pressure pipe lines; relative merits of high and low pressure holders; measurements of gas in large volumes to industries and private customers; economics of high pressure gas distribution; by-products of gas manufacture involving a state survey of production and consumption of tars, ammonia, etc.; the progress in gas manufacturing machinery and plant auxiliaries in the past year with new developments in manufacturing methods, etc.

There are two subcommittees, one on manufacture with O. H. Smith of the Consolidated Gas Company of New York, as chairman, and one on distribution with Joseph Lucena, of the Syracuse Lighting Company, as chairman.

The Managing Committee consists of: J. F. Cooper, Utica Gas and Electric Co., Chairman; O. H. Smith, Consolidated Gas Company, Vice-Chairman; R. R. Bogie, Kings County Lighting Company; G. L. Gray, Troy Gas Company; C. F. Ribley, Adirondack Power and Light Corporation; Joseph Lucena, Syracuse Lighting Company; C. E. Bennett, Binghamton Gas Works; H. E. Merrill, Republic Light, Heat and Power Co.; J. R. Crowell, Westchester Lighting Co.; R. E. Cruger, Rochester Gas and Electric Corporation.

Illinois Gas Association

THE Illinois Gas, the Illinois State Electric and the Illinois Electric Railways Associations will hold their annual conventions jointly in Springfield, Illinois, on March 17 and 18, 1927. There will be joint sessions in the mornings of each day and separate sessions for each Association in the afternoon. One of the joint morning sessions will be devoted to the work of the Illinois Committee on Public Utility Information, and the Public Speakers' Bureau.

Convention headquarters, registration and the morning sessions will be held at the Abraham Lincoln Hotel as will also the afternoon Electric Railways Association sessions. The Gas Association will hold its afternoon sessions in the Leland Hotel and the Electric Association at the St. Nicholas Hotel.

A strong educational and instructive general program is being prepared and many of the leaders in the utility industry will address the convention. It is expected that the attendance this year will exceed the high mark of 1000 registrations of last year.

A few of the papers to be presented at the sessions of the Illinois Gas Association are: "Load Building Gas Rates," by A. J. Luick, of Lucas & Luick, Consulting Engineers, Chicago; "House Heating," by G. C. Carnahan, The Peoples Gas Light & Coke Company, Chicago; "Merchandising Gas Appliances," by W. R. Lacey, Milwaukee Gas Light Co., Milwaukee, Wis.; "Gas Service," by J. Howard Mathews, Illinois Commerce Commission, Springfield, Ill.; "Treatment of Fuels in Gas Industry, Particularly Liquefaction of Coal," by Dr. A. C. Fieldner, U. S. Bureau of Mines, Pittsburgh, Pa.; and "Industrial Gas Sales," by W. H. Miller, Public Service Co. of Northern Illinois, Chicago, Ill. The Program Committee is arranging for a lively discussion of each subject on the program.

Indiana Public Utility Association—Gas Section

AT a meeting of the Board of Directors of the Indiana Gas Association, which is now known as the Gas Section of the Indiana Public Utility Association, it was decided to hold the annual meeting at French Lick Springs Hotel, French Lick, Indiana, on Thursday, Friday, and Saturday, May 19, 20, and 21, 1927.

The first day will be devoted exclusively to the gas industry, the second day to matters of general interest to public utility business, and the third day to subjects pertaining directly to the electrical business.

The Arrangement Committee, as appointed by President Van Arsdel, is as follows: F. B. Tracy, Chairman; C. D. Shaul, and T. J. Kelly.

At the above meeting the following committees were also appointed by President Van Arsdel:

Public Speaking and Publicity Committee

L. D. Spragle, Chairman; John C. Mellet, Secretary; E. E. Clay, F. G. Rastenburg, F. X. Mettenet, and F. W. Budd.

Membership Committee

E. J. Burke, Chairman, V. I. Kennedy, M. F. North, L. M. Edwards, H. H. Adams, M. A. Donahue, E. L. Donovan, and George Stewart.

Mid-West Gas Association

The 1927 convention of the Mid-West Gas Association will be held at St. Paul, Minnesota, on Wednesday, Thursday and Friday, April 20, 21 and 22, with headquarters at the Hotel St. Paul.

Plans are under way and committees are already at work preparing to make this the outstanding convention in the history of this Association. C. A. Nash, of Davenport, Iowa, is Chairman of the Program Committee and is arranging for a series of addresses, papers and discussions which will attract gas men from all parts of the Middle West.

Local plans—entertainment features which the Twin Cities of Minneapolis and St. Paul offer so abundantly—are under the supervision of Louis Stein, of the Northern States Power Co. A departure in the usual custom has been adopted by the officers and Council of the Mid-West Gas Association, in that the ladies will be invited to attend this convention, and Mr. Stein and his committee have some very pleasant surprises in store for everyone attending the Mid-West in April.

Reservations should be made directly with the management of the Hotel St. Paul.

Death of Dr. Howard Lyon

DR. Howard Lyon, well-known physicist and inventor, died recently at his home in Gloucester, N. J., where he has been engaged in research work for the Welsbach Company for the past seventeen years.

Dr. Lyon was a member of the Illuminating Engineering Society, and at the time of his death was secretary of the committee on nomenclature and standards. He was director of the society from 1923 to 1926.

THE Association has a few copies of the Proceedings of the thirty-seventh annual convention, 1925, of the National Association of Railroad and Utilities Commissioners. These will be sent to members free of charge. Orders will be filled in the order of their receipt.

Effect of Smoke on Health

(Continued from page 84)

beneficial influence on tuberculosis and its evil influence on pneumonia, leaving us still the observed facts that in a constant smoky atmosphere, such as Pittsburgh, the evidence is abundant that there is this wide difference in the dangers accompanying such an atmosphere.

All discussion on the antiseptic properties of smoke seems to me futile for there is not the slightest evidence of its activity in this way within the confines of the animal body, although Holman has shown that soot either by physical or chemical attributes is germicidal for certain micro-organisms in the test tube.

The supposition that carbon increases the incidence of cancer is also probably unfounded. The cancer death rate for cities in the United States is highest in San Francisco, one of the choice climates of the world. Pittsburgh, smoky in the extreme, on the contrary has a comparatively low death rate from cancer. These two facts would indicate that a belief that smoke increases the incidence of cancer can easily be refuted.

PHYSIOLOGICAL EFFECTS OF OTHER DUSTS IN SMOKE

The dusts associated with carbon emitted from our smoke stacks probably are a great deal more important than carbon. Of them we know practically nothing; carbon as the visible suspension so overshadows every other particle. Yet in a day when catalysts are a dominant factor in chemical activity, it is conceivable that small traces of other substances may be of infinitely greater importance. Of one dust, silica, we know a great deal. Long exposure to it stands alone as the one proven baneful influence from dust to which man is exposed. It not only is capable of destroying him and other animals through a series of definite pathological changes which it produces, but it is the one substance which we know favors the tuberculosis process both in man and in experimental animals. It does this possibly by some chemical process inaugurated by minute amounts over a long period of exposure. Mavrogordato likens its activity to a protective surface glazing such as eggs undergo by coating with water glass. It seems almost certain that carbon unaccompanied by siliceous dust is not a permanent deposit in the lung, for it is easily expelled without the chemical co-operation of silica particles.

Laboratory Is Feature

(Continued from page 103)

to the safety and dependability of appliances bearing the emblem will be made in the home service manual, and the home service demonstrators will emphasize approved equipment in their platform lectures and demonstrations.

Working in co-operation with the Home Service Department, but really functioning as part of the sales personnel, we have a group of young women known as "home service demonstrators," who make personal calls at the homes of prospects and purchasers of our appliances—in one case to demonstrate and sell the idea, in the other to keep the appliance "sold" and in use. Here is another opportunity for emphasizing the value of a Laboratory approved appliance.

Although we have not as yet formed in the Central Hudson valley a plumbers' organization comparable to the electrical leagues among the electrical contractors, we have established in years past an harmonious relationship with the plumbing fraternity, and with this as a background, we hope to secure the co-operation of this group in fostering the Laboratory idea among our consumers. Some resistance may be met, especially in cases where the plumber is called upon to decide between liberal trade discounts together with exceptionally friendly dealer relations, and an appliance bearing the A. G. A. approval but not providing the discounts or the dealer relationships. We believe, however, that resistance can, in time, be overcome.

ACCOUNTING SECTION
A. L. TOSSELL, Chairman EDWARD PORTER, Vice-Chairman
H. W. HARTMAN, Secretary

The Courtesy Card Builds Good Will

A Means of Extending Credit That Protects the Utility and Makes a Friend of the Customer

By G. E. LEWIS
Executive Manager, Rocky Mountain Committee on Public Utility Information

GAS and electric utilities of Colorado, New Mexico, and Wyoming are successfully co-operating in a good-will building effort which involves the presentation of a "courtesy card" to departing customers in good standing.

The courtesy card idea was launched a year ago during a joint conference of gas and electric company representatives, and since then it has been subjected to careful scrutiny by executives who have fully approved of its purpose, form, and results to date.

Though the card was intended primarily as a good-will building medium, its value as a credit gauge already has been established.

The card is addressed to all gas and electric utilities in Colorado, New Mexico, and Wyoming. When presented by the holder to one of these companies, it immediately identifies him as a person to whom credit can be extended—that is, he is not required to furnish a deposit before receiving service.

The card has a double value. In the first instance the company which issues it in recognition of a customer's good standing creates a friendly feeling on the part of the recipient. In the second place the company to which it is presented creates a friend of the holder by voluntarily offering service without exacting a deposit. The customer, however, is not advised of the credit-gauging features of the card, either by the issuing company or the company which takes it up.

The card was originated by W. C. Sterne, chairman of the public relations section of the Rocky Mountain Division, National Electric Light Association, and John Loiseau, chairman of the accounting section. The Rocky Mountain Committee on Public Utility Information is now promoting the use of the card on the part of all companies as a public relations effort.

COURTESY CARD

Satisfactory business relations are valuable both to customer and company. In recognition thereof this card is issued.

_____ 192____

TO ALL GAS AND ELECTRIC UTILITIES OF COLORADO, NEW MEXICO AND WYOMING:
The bearer of this card--

*Mr.*_____

whose signature is affixed, has been a valued customer of our company. Our mutual relations have been entirely satisfactory, and we are very pleased to commend him to the courtesies of any Electric or Gas Service Company from which service may be requested.

(Company name to be inserted here)

By_____

Bearer's Signature_____

(Utility receiving this card will please keep for reference)

The Courtesy Card

In urging the use of the card, the Committee sent to all companies a full explanation of its purpose and use, together with a wall card embracing rules for its issuance. The wall card is constantly displayed where company employees (but not the public) may at all times see it. Thus, it is a constant reminder to issue the courtesy card to those who are entitled to it.

Mr. Loiseau, in the statement which follows, explains the use of the card and, at the same time, details some of the objections that were raised and eliminated during the process of perfecting it:

"It was our purpose to evolve a method whereby information of the good standing of a customer could be transmitted from one utility to another so that, upon his applying for service, this information

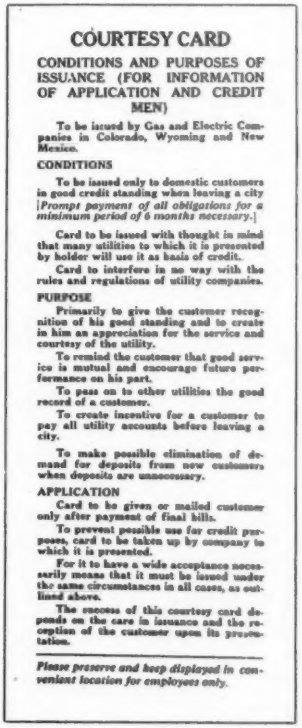
would be readily available and the embarrassment of asking him for a deposit eliminated. To do this it was concluded that the best method was to have the customer present this recommendation personally, through the courtesy card. Many obstacles to such a plan naturally presented themselves. If a straight credit card were issued, it could possibly be carried to extreme by a customer with firms other than utilities, and also conflict with the credit policy of some companies. If issued without geographical limitation, it would be presented to companies not familiar with its general purpose. Consequently official acceptance was restricted to Colorado, Wyoming, and New Mexico companies, pending more general adoption and recognition.

"Before adopting the courtesy card, a letter from company to company was discussed, but discarded because of the necessity of finding out where the customer was going and the fact that a letter would not be immediately available upon the customer's making application. Some obvious reason also had to be found for placing a card in the possession of a customer which would convey to those to whom it might be presented the credit idea, but yet not disclose such a purpose to the holder.

"From this developed the combined introduction-credit-courtesy card. The system, necessarily, could not be too cumbersome or involved, nor could it involve any material expense. The courtesy card meets these qualifications.

"In addition to the card, it was found necessary to familiarize all participating companies with the conditions and purposes of issuance of the card. Therefore, a wall card of instructions was placed in possession of each company. This card, designed to hang where employees only may always see it, bears complete instructions to application and credit men and is to be retained in their departments.

"It will be observed that this instruction card lays particular stress upon the necessity of all companies issuing the card under the same conditions. This is particularly essential since the value of the card as a medium of credit will totally disappear if the receiving company can not depend upon its reliability. Needless to say, the card will also lose its value to receiving companies unless the holder of the card is most cordially received. It was deemed advisable to have the receiving company take up and retain the card, inasmuch as it will have accomplished its purpose of establishing the holder's standing. The customer also will be made to feel that on his prompt payment and fair treatment of the utility depends whether or not he will again receive such a card in the event of his leaving. Taking up the card also protects any possible misuse of the card in securing credit from other than utility companies."



COURTESY CARD

CONDITIONS AND PURPOSES OF ISSUANCE (FOR INFORMATION OF APPLICATION AND CREDIT MEN)

To be issued by Gas and Electric Companies in Colorado, Wyoming and New Mexico.

CONDITIONS

To be issued only to domestic customers in good credit standing when leaving a city *[Prompt payment of all obligations for a minimum period of 6 months necessary.]*

Card to be issued with thought in mind that many utilities to which it is presented by holder will use it as basis of credit.

Card to interfere in no way with the rules and regulations of utility companies.

PURPOSE

Primarily to give the customer recognition of his good standing and to create in him an appreciation for the service and courtesy of the utility.

To remind the customer that good service is mutual and encourage future performance on his part.

To pass on to other utilities the good record of a customer.

To create incentive for a customer to pay all utility accounts before leaving a city.

To make possible elimination of demand for deposits from new customers when deposits are unnecessary.

APPLICATION

Card to be given or mailed customer only after payment of final bills.

To prevent possible use for credit purposes, card to be taken up by company to which it is presented.

For it to have a wide acceptance necessarily means that it must be issued under the same circumstances in all cases, as outlined above.

The success of this courtesy card depends on the care in issuance and the reception of the customer upon its presentation.

Please preserve and keep displayed in convenient location for employees only.

The wall card

PUBLICITY AND ADVERTISING SECTION

HARLOW C. CLARK, Chairman E. FRANK GARDINER, Vice-Chairman

CHARLES W. PERSON, Secretary

Broadcasting the Story of the Laboratory

Local Companies Will Find It Advantageous to Tell Their Customers About the Approval Seal

THE Testing Laboratory of the American Gas Association offers local gas companies a splendid opportunity to prove to their customers that every effort is being made to assure them that the gas appliances they buy are of high quality and will render good service. The Association is distributing free of charge a window card, envelope stuffer, and four advertisements explaining the action taken by the Association at the Atlantic City convention that companies will sell only approved appliances. Local newspaper copy coupled with the Association's material, which is in effect a complete merchandising plan, will be the final link in the chain to educate the people to the benefits of the Laboratory approval seal. See page 88 for Association material.

The advertisements reproduced below are a few of those recently used by the Consolidated Gas Company of New York. They are forcing home the Laboratory story to New York people.

Your Guarantee of STANDARD QUALITY
Approved
Ask Your Gas Company
GAS FACTS
No. 5—Do you know why your Gas Company sells only those cooking and heating appliances which have been tested and approved by both the American Gas Association and our own Testing Laboratory? The answer is—our vital interest in Good Service. Approved appliances insure your enjoyment of it.
You Stand Protected
When You Buy Your Gas Range Here
Approved
By its support of and compliance with the standard specifications of the American Gas Association, and by its own rigid laboratory test of all gas appliances, your Gas Company stands guard between you and inferior kitchen equipment
We sell only those ranges which have met our tests.
INSIST
on Approved GAS RANGES
Your Gas Company is only one of the places where you can buy gas ranges approved by the American Gas Association as well as by our own Testing Laboratory.
Just because we are primarily interested in GOOD SERVICE, we earnestly urge you to make certain that even the particular models you buy—wherever you buy them—have been so approved. Your best protection is to
ASK YOUR GAS COMPANY FIRST
The Consolidated Gas Company of New York
1853 — MORE THAN 100 YEARS OF UNINTERRUPTED PUBLIC SERVICE — 1926
THE GUARANTEE
of AN ENTIRE INDUSTRY
THE entire gas industry, through the American Gas Association, urges you not to purchase gas appliances indiscriminately.
Wherever you buy your Gas Ranges be sure that the model has been tested and approved in the association's Testing Laboratory as well as in the Utilization Laboratory of your Gas Company.
For the sake of good service,
ASK YOUR GAS COMPANY FIRST
The Consolidated Gas Company of New York
1853 — MORE THAN 100 YEARS OF UNINTERRUPTED PUBLIC SERVICE — 1927

A few specimen advertisements in which the Consolidated Gas Company of New York makes the national Testing Laboratory of local interest and importance to customers

Problems in Compression

(Continued from page 87)

partial pressure of air = (15.0 + 14.7 — 0.08) = 29.62 lbs. per sq.in.

The volume of saturated air at 15 lbs. and 30° F. = $\frac{(14.62)\ (12.41)}{29.62}$ = 6.12 cu.ft.

Since at 30° F. and 0.0809 lb. per sq.in. pressure, a cubic foot of water vapor weighs 0.000278 lb., the pounds of water vapor at 30° F. and 15 pounds gauge per pound of dry air = 6.12 (0.000278) = 0.00170 pound.

For the final condition, the total pressure on the system = P

Let us call partial pressure of the gas or air = p

Let us call the total volume of the gas or air = V

The final condition may be considered graphically:

Air—

pressure (partial)	= p
volume	= V
temp.	= 50° F.
weight	= 1 lb.

Water Vapor—

pressure	= 0.178 lb./sq.in.
volume	= V
temp.	= 50° F.
weight	= 0.00170 lb.

The final conditions may be compared with the initial conditions as described above.

Considering the air (or gas) in its initial and final conditions, since the weight of air is the same and its temperature is the same, the pressure-volume product must be identical.

initial final

Therefore (14.52) (13.00) = p V (1)

This may be called equation (1)

Further P = p + 0.178 (lb./sq.in.) (2) This may be called equation (2) (pressures are absolute).

Since we now have 0.00170 pound of water vapor, instead of 0.00764 pound in the initial condition, the volume V must be

$V = \frac{0.00170}{0.00764}(13.00) = 2.895$ cu.ft.

Substituting in (1), $p = \frac{188.7}{2.895} = 65.2$ lbs./sq.in.

Substituting in (2), P = 65.4 lbs./sq.in. absolute or 50.7 gauge. This is the required final pressure.

Using this method of calculation for the same problem with various initial temperatures for gas, the results have yielded the curve in Figure I marked "Expanded to 15 lbs. Gauge Pressure." Curves are also given for the cases where the gas is compressed to a final high pressure, at which higher pressure the gas will contain such an amount of moisture that if the gas is later expanded to 25 lbs. gauge pressure, or to 5 lbs. gauge pressure, it will have a dew point of 30° F.

Why Capitalize Attendance?

(Continued from page 78)

quently to present the subject matter in an effective way to department, round-table groups, or educational group meetings.

2. Those employees of a company who attend the convention should, while in attendance, meet at least once under the guidance of an assigned leader to plan and receive directions, if any are necessary, for covering the convention in a way to secure the greatest benefits for the company concerned.

3. As soon as possible after the convention a conference should be called in each department of the company for the purpose of having the employees of that department who attended the convention report to the entire group. Such a conference would give an opportunity for questions, answers, and discussions which would bring back to the organization in a very direct way the benefits derived from attending the convention. This would also give an opportunity for making any authoritative change of methods, practices, and policies deemed advisable as a result of the discussions, and in this way attendance at the convention would be linked definitely with the benefits obtained.

4. Prizes might be offered with advantage to all concerned for the preparation of papers on subjects dealt with at the convention. The papers so prepared should be posted in the library and on the bulletin boards of the company, and those which show special merit and deal with subject matter of general interest might be printed in the company's house organ.

5. Copies of the papers and reports presented at the convention should be obtained and distributed to those persons in the company who are particularly concerned with the matters covered by such papers and reports.

MANUFACTURERS SECTION
W. E. STEINWEDELL, Chairman H. L. WHITELAW, Vice-Chairman
C. W. BERGHORN, Secretary

Another Big Building Year Ahead

Fruitful Field Ahead for Gas Industry, in Supplying Gas Service to New Buildings of all Types

By C. STANLEY TAYLOR

THE closing figures of the year 1926 show an astounding total national expenditure of well over $6,000,000,000 in new building construction. Including alterations and unrecorded transactions, this total probably measures over $7,000,000,000, thus establishing for the past year an unprecedented record of construction activity and one which probably will be unequaled for many years to come.

It is difficult to conceive that the year 1927 will record as great a national building investment as that of 1926. All indications point to the fact that while 1927 will probably prove to be one of the great years of building history, its total investment in new building construction will be approximately 12 per cent less than in 1926. In other words, the forecast of *The Architectural Forum* indicates for 1927 a total of about six billion dollars as opposed to the seven billion dollar record of 1926.

The architects' reports have been correlated and weighted in the accompanying table, which shows a total of $4,856,817,500. In addition there will be several hundred million dollars expended for small residences, together with a large volume of industrial building and a considerable program of remodeling; therefore, the forecast for 1927 exceeds six billion dollars.

It is quite probable that a considerable part of the decrease in building activity

BUILDING TYPES	N. EASTERN STATES	N. ATLANTIC STATES	S. EASTERN STATES	S. WESTERN STATES	MIDDLE STATES	WESTERN STATES	U.S.A.
Automotive	$8,605,000	$37,070,000	$8,887,500	$8,735,000	$52,365,000	$21,470,000	$137,132,500
Banks	16,000,000	81,425,000	4,485,000	6,700,000	41,050,000	8,997,500	158,657,500
Apartments	21,757,500	331,602,500	14,500,000	25,317,500	157,047,500	57,775,000	608,000,000
Apartment Hotels	6,337,500	117,362,500	5,562,500	5,675,000	48,150,000	25,150,000	208,237,500
Clubs Fraternal, etc.	11,882,500	62,362,500	9,687,500	12,395,000	73,667,500	37,845,000	207,840,000
Community and Memorial	4,337,500	29,570,000	1,112,500	18,815,000	31,275,000	11,522,500	96,632,500
Churches	39,345,000	99,840,000	12,937,500	35,402,500	90,960,000	36,415,000	314,900,000
Dwellings* (Under $10,000)	8,555,000	40,607,500	7,925,000	12,990,000	31,867,500	13,875,000	115,820,000
Dwellings* ($10,000 to $20,000)	7,925,000	39,687,500	6,095,000	11,940,000	38,737,500	12,095,000	116,480,000
Dwellings* (Over $20,000)	8,075,000	33,520,000	2,212,500	5,915,000	29,220,000	11,387,500	90,330,000
Hotels	20,970,000	92,442,500	25,762,500	37,725,000	92,950,000	66,917,500	336,767,500
Hospitals	17,850,000	126,937,500	7,850,000	18,465,000	78,222,500	23,622,500	272,947,500
†Industrial	42,362,500	134,205,000	2,415,000	18,555,000	139,455,000	17,797,500	354,790,000
Office Buildings	32,250,000	194,140,000	7,757,500	47,385,000	267,845,000	68,250,000	617,627,500
Public Buildings	28,102,500	102,027,500	6,950,000	10,912,500	65,845,000	56,440,000	270,277,500
Schools	52,900,000	144,950,000	24,770,000	43,325,000	219,080,000	81,215,000	566,240,000
Stores	5,417,500	42,025,000	14,072,500	7,567,500	25,487,500	12,497,500	107,067,500
Theaters	18,637,500	54,747,500	6,995,000	11,012,500	93,367,500	14,892,500	199,652,500
Welfare Y.M.C.A., etc.	7,425,000	24,167,500	4,262,500	4,745,000	30,537,500	6,280,000	77,417,500
TOTAL VALUE OF NEW BUILDINGS	$358,735,000	$1,788,690,000	$174,240,000	$343,577,500	$1,607,130,000	$584,445,000	$4,856,817,500

©THE ARCHITECTURAL FORUM *Architects plan 20% of small houses. Multiply by five for total. †Architects plan 50%

Forecast of new building for 1927. Figures represent only work being planned by architects

in 1927 as compared to 1926 will be found in the cutting down of cheap speculative building. From important mortgage money sources it is learned that the constantly growing tendency is to discourage flimsy construction, and the supervision of specifications has been developed to a considerable degree of efficiency.

One of the principal reasons for the great volume of building activity during 1926, and as anticipated for 1927, is the desire of the public for better housing of all kinds and for more modern and attractive environments. We must also take into consideration the rapid establishment of new residential districts and the growing habit of developing new business centers in the larger cities—areas where certain trades are becoming concentrated. This tendency is noteworthy in practically all of the larger cities in the country.

Reports received by *The Architectural Forum* have been carefully compared with last year's forecast figures and with the actual record of contracts let. This shows that in the Northeastern States building activity will be approximately 10 per cent less in 1927 than in 1926. In the North Atlantic States, which include the New York area, a similar average reduction in activity is expected. In the Southeastern States, it is anticipated that construction will be probably 20 per cent to 25 per cent less. The Southwestern States promise a volume of new building approximately equal to that of last year. Figures received from the Middle Western States, including the Chicago district, show no anticipated reduction of activity —in fact, all indications point to a program probably 10 per cent greater than that of 1926. The Western States also show activity about 10 per cent less.

For the entire United States, new automotive buildings, bank buildings, club and fraternal buildings, community and memorial buildings, hospitals, commercial buildings, schools, stores, theatres, and welfare buildings will be constructed in approximately the same proportion to the total new construction as was the case in 1926. A considerable increase is anticipated in the building of apartment hotels, churches, and public buildings.

The construction of new hotels promises to be probably 20 per cent less than the actual figures of 1926.

A reduction of approximately 15 per cent is expected in new construction contracts let for industrial buildings. Dwellings under $10,000, which made up approximately one billion dollars of last year's total, will probably show a 20 per cent reduction in activity, while the construction of dwellings over $10,000 will be about 10 per cent less.

The United States is apparently going about its building business in a sensible way, meeting requirements in a far-seeing manner, and undertaking no program which will do other than meet the sane requirements of the situation. Over the next few years a gradual reduction of building activity is anticipated—one which will ultimately bring the national building program to a new normal of approximately $4,000,000,000 a year.

Error

IN the December issue of THE MONTHLY, it was erroneously stated that Waite & Davey Co., Inc., 5 Court Square, Long Island City, N. Y., is now known as the American Arch Co., 17 East 42 St., New York, N. Y. The notice should have read that the American Arch Company is now the exclusive licensee under Waite and Davey patents of the air cooled refractory walls formerly sold by the Waite & Davey Co., who are no longer in existence.

AN OPPORTUNITY FOR EXHIBITORS

AT the American Homes National Congress, which will be held in Des Moines, Iowa, March 8 to 11, 1927, under the auspices of the General Federation Women's Clubs, there will be held an exhibit of various lines of home equipment. Those manufacturer members of the American Gas Association who are interested should write L. W. Lane, chairman of exhibits committee, 1714 Locust Street, Des Moines, Iowa, for detailed information.

INDUSTRIAL GAS SECTION

H. O. LOEBELL, Chairman F. C. MACKEY, Vice-Chairman
C. W. BERGHORN, Secretary

From Orange Peel to Brick

Gas Helps California Industries; Summary of Problems Met to Insure Supply of Natural Product

By GEO. BOWERSOX

Utilization Engineer, Southern California Gas Company, Los Angeles, Calif.

HERE, as in other natural gas producing areas, natural gas plays a most important role in industry. Seeing the value of this natural resource, steps were taken to conserve it systematically.

Conservation means the economic use of a product, not the hoarding of it. So in Southern California every industry on our lines receives technical service such as determinations of proper sized combustion chamber, proper damper settings for all loads and a thorough flue gas analysis.

Gas-fired steam boilers in the plant of the Goodyear Tire and Rubber Company in Los Angeles

From these data, which are given periodically or as often as asked for, industry is burning natural gas efficiently. This not only lowers the consumers' cost of production, but gives the salesman a customer to whom he can send any prospect and feel assured that natural gas will receive the sincere praise that it deserves. Naturally this is convincing propaganda to the prospect.

In the district around Los Angeles the greatest portion of natural gas is being consumed by boilers, brick and tile yards and oil refineries. We feel quite proud of our many installations. For example, every meat packing plant in Los Angeles is burning natural gas under its boilers. Every laundry that is in a district supplied by natural gas is a consumer. Also every large dyer and cleaner that can get natural gas is using it. We have approximately 300 large industrial consumers that use about a billion cubic feet of gas a month. This includes 246 high pressure boiler plants totaling 60,000 boiler horse power.

The only time that natural gas may be an important factor in the industrial scheme of things is when there is some assurance of continuity of supply. The reason for this is obvious when one considers the cost of changing a fire box and installing good burners, regulating and recording devices. This investment would never be justified if the supply were not sufficient to pay a good return on the money invested.

Since the importance of continuous service is recognized, this company receives gas from practically every field

in Southern California, either by its own pipe lines or by transportation agreements.

The boiler load on our lines is only supplied on a contract which allows discontinuance of service at any time to supply our domestic consumers or consumers having an essential use for gas.

The following are considered essential users of gas—glass plants, gas engines, heat treating furnaces, carburizing furnaces, brass melting furnaces, core ovens, soft metal melting installations, bake ovens and other ovens used for the production of food products and units designed for the use of gas only. These consumers are taken care of by a limited industrial schedule which has priority over all other uses of gas other than domestic. This arrangement with our surplus gas consumers—namely boilers and the limited industrial schedule for our essential gas users—takes care of our load curve, or it might be called aptly the production curve in a natural gas area. In a very short time we can change millions of cubic feet of gas from industrial uses to available gas for domestic consumption. This is taken care of by having dual fuel system of gas and oil. The necessity for this fuel arrangement is due to the short winter heating load which is five times the summer load.

Natural gas is being used in every conceivable manner from dehydrating orange peel to making steam which is condensed in the largest surface condenser in the world which is installed at the Southern California Edison electric plant. The truth of the slogan "If it is done with heat, you can do it better with gas" is being corroborated every day in many ways in Southern California.

Cooperation Sells House Heating

(Continued from page 92)

by the gas company, forming a committee to deal with matters of mutual interest.

This committee has held monthly meetings at which the prices, commissions, and installation specifications of all appliances handled by either the contractors or the gas company have been discussed. Price sheets have been printed giving the following information on each item:—the time price, the cash price, the first payment, payment per month, the number of months, the sale price to the contractor delivered with no connections, the sale price to the contractor delivered and gas connected, and the commission to the contractor. The last mentioned has been used where the contractor has sent a prospect to the company on the regular forms provided, and the sale and installation has been handled by the company.

A monthly letter has been written from the committee to the contractors, discussing various points which have been brought up at these meetings. The results of this work have been entirely satisfactory from the viewpoint of both the company and the contractors.

The company is frequently bringing the matter of merchandising only approved appliances to the attention of the contractors and looks forward to the time when an agreement will permit only appliances carrying the "Blue Star" of approval to be sold in Fall River.

In Memoriam

Frank B. McKenna, New York and Queens Gas Co., Flushing, L. I.
John Thomson, The Peoples Gas Light & Coke Co., Chicago, Ill.
H. Floyd King, Traverse City Gas Co., Traverse City, Mich.

COMMERCIAL SECTION

J. J. BURNS, Chairman G. M. KARSHNER, Vice-Chairman
J. W. WEST, Jr., Secretary

First Mid-West Sales Conference Announced

Gas Men of Seven States to Gather in Chicago February 16, 17, and 18 to Discuss Domestic Merchandising

THE first Mid-West Sales Conference of the Commercial Section of the A. G. A. will be held at the Hotel Sherman, Chicago, Ill., February 16, 17, and 18. This conference will deal specifically with the sales methods employed by gas companies in the following states: Illinois, Indiana, Michigan, Iowa, Minnesota, Missouri, and Wisconsin. A large attendance from each state is expected, as the committee in charge has been chosen from gas companies throughout the Middle West. J. E. Davies, The Peoples Gas Light & Coke Co., is chairman of the Mid-West Regional Sales Council.

The success of the sales conferences held in the East during the past two years is indicative of the success of this Mid-West conference. A feature will be the limiting of all speakers to those men who are directly connected with the gas industry. In the opinion of the Council, the merchandising problems of the territory can be covered to better advantage by those men who have solved the problems in their territories.

A program has been arranged that will deal exclusively with actual experiences and definite plans that have been used in the Mid-West territory. The topics will be of particular value to the individual salesman who is directly on the "firing line," and each speaker has been selected for the outstanding record that has been made by his company in merchandising gas and gas-burning appliances of the type he will discuss. The papers presented will give full details of definite sales methods which have produced outstanding results. No time will be devoted to theoretical and abstract discussions.

The dates were chosen to make it possible for the plans discussed to be utilized by those present early in the spring and during the rest of the year.

Confined to the sale of gas for domestic purposes, the conference will discuss the following subjects: House heating, water heating, auxiliary and garage heating, gas for new homes, laundry equipment, incineration, selling Laboratory approved appliances, selling gas ranges in large and small communities, home service, refrigeration, supervising salesmen and methods, and window and store displays as an aid to sales.

As a particular feature, the committee has secured Samuel Insull, Jr., to deliver the address of welcome.

Among the speakers who will cover the various subjects are: F. C. Mackey and W. F. Miller, Public Service Company of Northern Illinois; Geo. Klopf, North Shore Gas Company, Chicago, Ill.; B. N. Gardner, Northern Indiana Public Service Co.; C. A. Luther, The Peoples Gas Light and Coke Co., Chicago, Ill.; R. O. Jasperson, The Milwaukee Gas Light Co.; R. J. Canniff, chairman, A. G. A. Blue Star Committee, Chicago, Ill.; P. D. Warren, The Peoples Gas Light and Coke Co.; J. J. Burns, The Laclede Gas Light Co., St. Louis, Mo.; G. C. Carnahan, The Peoples Gas Light and Coke Co.; S. C. Reiser, The Laclede Gas Light Co.; A. W. Baker, Kansas City Gas Co.

There will be ample time for discussion, and the meetings will be informal.

Reservations can be made through C. A. Luther, Room 319, Peoples Gas Bldg., Chicago, Ill.

Home Service Plans Big Year

Counsellor at A. G. A. Headquarters Will Promote and Establish Departments by Field Work

THE American Gas Association has available at Headquarters a trained and experienced home service director, who will assist companies in organizing home service departments and who will also render advice of a consulting nature to those companies who need it. Territory surveys will be made to determine the advisability of establishing a home service department, and in addition, companies may arrange for special lecture demonstrations and talks before clubs and organizations. These services are free for member companies.

This work will be handled by Miss A. Deane Dowell, home service counsellor of the Association, and is but part of the program of activities as outlined by the Home Service Committee for 1927. This committee, under Miss Helen Wetherell, of St. Louis, is outlining a broad program for the coming year. Through her arrangements can be made for home service directors to visit other companies to learn of methods and practices.

The committee is planning to conduct a survey to show the actual results of home service. Stimulation for the formation of new home service departments will be given by the field work of the counsellor and by personal contact work by members of the committee, whenever possible.

A survey recently made brings out the interesting fact that for the year ending November first, seven and a half million women were given cooking instruction by home service departments of gas companies.

For the year ending October 31, the home service workers of gas companies taught 367,299 women in specially conducted cooking classes. Almost 100,000 calls to give instruction and help in the home were made, and 306,337 telephone calls answered. Approximately 6,742,200 women were reached by cooking lectures over the radio. In addition, more than 12,000,000 special recipe sheets were distributed.

The results from the survey also show that the local gas company is perhaps the largest clearing house for domestic information in the world. Special requests for help in cooking are augmented by demands for diets for sick dogs, recipes for beauty creams and home brew, and helps in selling poems.

Talks on Carbon Monoxide

THE New York and Richmond Gas Company co-operated with the Medical Society of Richmond in presenting a series of talks on carbon monoxide on January 12. The program consisted of the following:

"Safeguarding Life and Health from Carbon Monoxide Poisoning," Joseph M. Lonergan, sanitary adviser, Department of Health, New York, N. Y.

"Carbon Monoxide from the Medical Standpoint," Arthur S. Driscoll, M.D.

"Resuscitation from Carbon Monoxide poisoning."

The company, through William J. Welsh, President, has presented a respirator to the hospitals of Staten Island.

REGARDING REPRINTS

ONCE AGAIN we wish to remind our contributors and readers that reprints of any material published in the American Gas Association MONTHLY may be obtained in accordance with the following scale:

100 copies, 1 page	$2.00
Additional 100's	.40
100 copies, 2 pages	3.00
Additional 100's	.40
100 copies, 4 pages	7.00
Additional 100's	.75
100 copies, 8 pages	10.75
Additional 100's	1.05

TECHNICAL SECTION
WALTER C. BECKJORD, Chairman HARRY E. BATES, Vice-Chairman
H. W. HARTMAN, Secretary

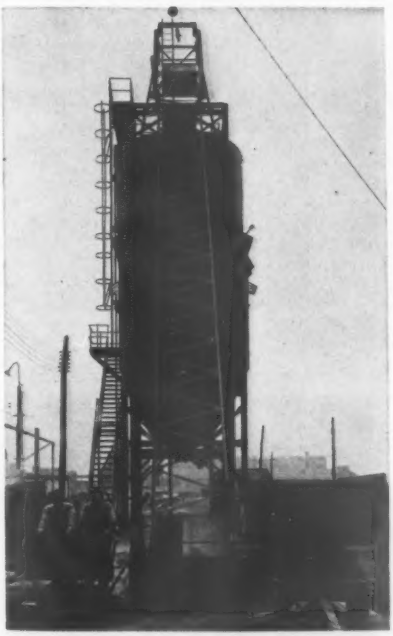
Coke Recovery Plant Reclaims Eighteen Per Cent of Coke Handled

By W. B. CARTER
Assistant to Superintendent, The Consolidated Gas, Electric Light & Power Co., Baltimore, Md.

THE efficiency of the coke recovery plant put into operation in May 1924, by the Consolidated Gas, Electric Light & Power Company of Baltimore, Md., is proved by the fact that approximately 60,000 tons of coke and ashes were handled and from this mixture there was reclaimed, for use in the generators, 11,000 tons of coke. This plant, which is located at Spring Gardens Station, is used for reclaiming the coke removed with the ash from the generators of the water-gas sets. It is impossible, when cleaning a generator fire, to remove the ash without removing and mixing with the ash a considerable amount of good coke. This plant mechanically separates, by means of screens, the coke and coke-size clinkers from the large clinkers and fine ash. The coke-size clinkers are then hand picked from the coke as it passes over a picking belt. By this method the labor required to recover the coke is reduced to a mininum.

Before the coke recovery plant was installed, the coke mixed with the ash was hauled away to the dump. It was either a total loss or a partial loss, as only a small percentage of it was salvaged by hand picking and forking from the ash and clinkers. When operating a large water-gas plant at full capacity, a large number of laborers were needed in reclaiming the coke by the old hand-picking method. This method of reclaiming coke is expensive and very inefficient. The new method is a great improvement.

Our water-gas sets are elevated about eight feet above the ground, so that the coke and ashes which are removed from the clinkering doors enter chutes located directly below these doors. An ash car is placed under each chute to catch the coke and ashes. After the mixture is quenched, the cars are removed from the generator house to the receiving hopper of the skip-hoist at the coke recovery plant which is located nearby. One illustration shows men dumping the contents of the ash cars upon a mesh grating on top of this receiving hopper. The mesh



Exterior of coke recovery plant

Dumping the ash mixture into the receiving hopper

A truck loaded with reclaimed coke from the coke recovery plant

grating prevents the large clinkers from passing into the skip-hoist bucket. The clinkers remaining on the grating are put into ash cars or trucks and are hauled to the clinker dump.

Under the receiving hopper is an automatic loader which loads the skip-hoist bucket with the mixture of coke and ashes. The skip-hoist, which is of the slow-speed type, elevates the material and discharges it into an elevated cylindrical storage bunker located above the screen house. This bunker has sufficient storage capacity to accommodate the ashes produced during the night.

Under the storage bunker is a reciprocating feeder which feeds the material from the bunker to a double decked vibrating screen. This screen separates the material into three sizes: first, a medium size clinker, which has passed through the grating over the receiving hopper, and which passes over the top screen. This is discharged into the ash bunker below by means of a chute at the end of the screen. The next size is the coke, and coke-size clinker which has passed through the top screen. This passes over the lower screen and is discharged on the picking belt at the end of the screen. The third size is the fine ash, which passes through all of the screens and drops into the ash bunker with the medium size clinkers.

The picking belt, 48 inches wide and 17 feet long, travels at a slow rate of speed. Four men are stationed alongside of the picking belt to pick the coke-size clinker from the coke. The clinkers are dropped into chutes on each side of the belt, and thus directed into the ash compartment of the bunker below the belt. The recovered coke passes off at the end of the picking belt and drops into the coke compartment of the bunker. The time and labor required in this process is dependent upon the quantity of ash and coke to be handled, which of course, is dependent upon the plant load.

Coking picking belt

The coke that is reclaimed in this way is removed from the coke bunker and hauled away by auto trucks and dumped into the receiving hopper of a coke bucket elevator. This elevates and mixes the coke with the new coke on the main conveyor belt.

All of the ashes produced at the plant are sold to a contractor who removes the coke ash as well as the boiler ash in trucks.

What of Accidents?

(Continued from page 90)

man too many set questions which are for classification purposes only; let him tell the bare facts, the where, when and how.

Every accident report should have careful study. It is not enough to classify the accident in the numerous ways possible and then file the report. Every individual report carries its lesson. It isn't "just another burn." Every little accident has a lesson of its own.

The quicker we take the full benefit from each accident experience by assembling properly, and using advantageously all information concerning an accident, the quicker the frequency of accidents and accident reports will be reduced.

OUR NEW MEMBERS

GAS COMPANY MEMBERS

Peoples Light Co. of Pittston, Pittston, Pa.

HOLDING COMPANY MEMBERS

Stevens & Wood, Incorporated, New York, N. Y.

MANUFACTURER COMPANY MEMBERS

Lyon Metallic Manufacturing Co., Aurora, Ill.

The Buck's Stove & Range Co., St. Louis, Mo.

ACTIVE MEMBERS

Allen, Richard W., South County Public Service Co., Westerly, R. I.

Todd, J. Arnold, South County Public Service Co., Westerly, R. I.

Ostlund, George, Westchester Lighting Co., Port Chester, N. Y.

Sternemann, Henry, Westchester Lighting Co., Yonkers, N. Y.

Gregory, T. B., Manufacturers Light & Heat Co., Pittsburgh, Pa.

Nash, Luther R., Stone & Webster Inc., Boston, Mass.

Smigell, Miss Ella, Public Service Electric & Gas Co., Newark, N. J.

Gardner, William G., Public Service Electric & Gas Co., Newark, N. J.

Howe, Donald K., Public Service Electric & Gas Co., Newark, N. J.

Niles, Howard, Public Service Electric & Gas Co., Jersey City, N. J.

Wiesenberg, David W., Public Service Electric & Gas Co., Jersey City, N. J.

Shepard, Charles F., Central Hudson Gas & Electric Co., Poughkeepsie, N. Y.

Neal, Herbert, Connelly Iron Sponge & Governor Co., Long Island City, N. Y.

Kraussman, Arthur S., Central Union Gas Co., New York, N. Y.

Pond, William A., Astoria Light, Heat & Power Co., Astoria, L. I.

Dunstan, Thomas S., Westchester Lighting Co., Yonkers, N. Y.

Esdorn, Walter, Consolidated Gas Co. of N. Y., New York, N. Y.

Rowand Jr., Ellwood M., Philadelphia Suburban Gas & Electric Co., Chester, Pa.

Clark, Edwin R., Lynn Gas & Electric Co., Lynn, Mass.

Grant, Thomas E., Utilities Service Co., Chicago, Ill.

Stevens, R. P., Allegany Gas Co., Port Allegany, Pa.

Blair, Frank W., Wilputte Coke Oven Corp., New York, N. Y.

Jenkins, Paul A., Utility Securities Co., Chicago, Ill.

Waddick, J. G., Peoples Gas Light & Coke Co., Chicago, Ill.

Kah, C. L. C., Palm Beach Gas Co., West Palm Beach, Fla.

Davis, Morton O., The Brooklyn Union Gas Co., Brooklyn, N. Y.

Coleman, Harold F., The Brooklyn Union Gas Co., Brooklyn, N. Y.

Schoneberger, Adolph, The Brooklyn Union Gas Co., Brooklyn, N. Y.

VanBenthuysent, Wm. F., The Brooklyn Union Gas Co., Brooklyn, N. Y.

Greacen, Albert, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Kane, William J., The Brooklyn Union Gas Co., Brooklyn, N. Y.

Walsh, Patrick T., The Brooklyn Union Gas Co., Brooklyn, N. Y.

Roesch, Fred M., The Brooklyn Union Gas Co., Brooklyn, N. Y.

Cannon, Harold C., The Brooklyn Union Gas Co., Brooklyn, N. Y.

Choate, Wilbur S., The Flatbush Gas Co., Brooklyn, N. Y.

Barton, Jay, The Peoples Gas Light & Coke Co., Chicago, Ill.

Farrell, Joseph W., Consolidated Gas Co., of N. Y., New York, N. Y.

Evans, William J., Consolidated Gas Co. of N. Y., New York, N. Y.

McMasters, Arthur G., Lincoln Public Service Co., Lincoln, Nebr.

Jost, A. E., Midland Utilities Co., Chicago, Ill.

Binder, George Paul, The East Ohio Gas Co., Cleveland, O.

Sommer, Carl E., Majestic Manufacturing Co., St. Louis, Mo.

Bradley, Wallace H., Springfield Gas Light Co., Springfield, Mass.

Meade, G. Walter, Gas Light Co., of Waverly, Waverly, N. Y.

Conway, Thos. H., Regent Stove Co., Wyandotte, Mich.

Jennings, Warren G., Minneapolis Heat Regulator Co., Chicago, Ill.

Mandel, Henry J., Combustion Utilities Co., Toledo, O.

Campbell, Elliot, Milwaukee Gas Light Co., Milwaukee, Wis.

Shearon, B. P., Midland Utilities Co., Chicago, Ill.

Gray, Emmons T., Central Hudson Gas & Electric Co., Poughkeepsie, N. Y.

Carroll, A. V., Consolidated Gas Co. of N. Y., New York, N. Y.

Gray, James F., Fall River Gas Works Co., Fall River Mass.

Fieger, G., Fieger & Lieb, New York, N. Y.

Cole, George A., Plattsburgh Gas & Electric Co., Plattsburgh, N. Y.

Dickinson, K. F., Northern Indiana Power Co., Huntington, Ind.

Richardson, H. T., Richardson & Boynton Co., New York, N. Y.

THE change from coal fuel to gas has transformed the roasting room of a large New York coffee house from a stifling, smoky "furnace room" where four men toiled and sweated and drew four pay envelopes every week, to a comfortable, roomy, well-ventilated factory department operated by one man chosen for his proficiency in the art of roasting coffee rather than for his brawn.

Associations Affiliated with A. G. A.

K. R. Boyes, Secretary

Canadian Gas Association
Pres.—J. J. Armstrong, Consumers Gas Co., Toronto, Ont.
Sec.-Tr.—G. W. Allen, 7 Astley Avenue, Toronto.
Conv., 1927.

Empire State Gas and Electric Association
Pres.—H. M. Brundage, Consolidated Gas Co. of New York, New York, N. Y.
Chairman Gas Section—J. E. Cooper, Utica Gas & Electric Co., Utica, N. Y.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.
Conv., Lake Placid Club, Lake Placid, N. Y., Oct. 6 & 7, 1927.

Illinois Gas Association
Pres.—W. A. Bertke, Illinois Power & Light Corp., East St. Louis, Ill.
Sec.-Tr.—R. V. Prather, 305 Illinois Mine Workers Bldg., Springfield, Ill.
Conv., Springfield, Ill., March 17 & 18, 1927.

Indiana Public Utility Association—Gas Section
Pres.—E. Van Arsdel, 1100 J. F. Wild Bldg., Indianapolis, Ind.
Sec.-Tr.—E. J. Burke, Room 1270, Peoples Gas Bldg., Chicago, Ill.
Conv., French Lick Springs Hotel, French Lick, Ind., May 19, 20, 21, 1927.

Michigan Gas Association
Pres.—C. R. Henderson, Washtenaw Gas Co., Ann Arbor, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., Grand Hotel, Mackinac Island, Mich., July 5, 6, 7, 1927.

Mid West Gas Association
Pres.—Frank S. Edge, Peoples Light & Fuel Co., Grinnell, Iowa.
Sec.-Tr.—H. R. Sterrett, 551 Seventh St., Des Moines, Ia.
Conv., St. Paul, Minn., April 21 & 22, 1927.

Missouri Association of Public Utilities
Pres.—F. S. Dewey, Kansas City Power and Light Co., Kansas City, Mo.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th St., St. Louis, Mo.
Conv., Cape Girardeau, Mo., May 5, 6, 7, 1927.

New England Gas Association
Pres.—F. C. Freeman, Providence Gas Co., Providence, R. I.
Acting Secretary—E. A. Taylor, 100 Weybosset St., Providence, R. I.
Pres. Operating Div.—G. Warren Stiles, Portland Gas Light Co., Portland, Me.
Sec.-Tr. Operating Div.—F. E. Drake, Lynn Gas & Electric Co., Lynn, Mass.
Pres. Sales Div.—M. B. Webber, Marlboro-Hudson Gas Co., Boston, Mass.
Sec.-Tr. Sales Div.—J. H. Sumner, 719 Massachusetts Ave., Cambridge, Mass.
Pres. Industrial Div.—R. J. Phelan, Worcester Gas Light Co., Worcester, Mass.
Sec.-Tr. Industrial Div.—J. J. Winn, Jr., Fall River Gas Works Co., Fall River, Mass.
Conv., Bancroft Hotel, Worcester, Mass., Feb. 23 & 24, 1927.

New Jersey Gas Association
Pres.—L. N. Yetter, Atlantic City Gas Co., Atlantic City, N. J.
Sec.-Tr.—Louis Stoecker, Public Service Electric & Gas Co., Newark, N. J.
Conv., Bellevue-Stratford Hotel, Philadelphia, Pa., April 7, 1927.

Oklahoma Utilities Association
Pres.—J. A. Frates, Oklahoma Union Railway Co., Tulsa, Okla.
Mgr.—E. F. McKay, Oklahoma City, Okla.
Conv., Huchins Hotel, Oklahoma City, Okla., March 8, 9, & 10, 1927.

Pacific Coast Gas Association
Pres.—W. S. Yard, Pacific Gas & Electric Co., San Francisco, Calif.
Exec. Sec.—Clifford Johnstone, 447 Sutter St., San Francisco, Calif.
Conv., Santa Cruz, Calif., Sept., 1927.

Pennsylvania Gas Association
Pres.—Allyn C. Taylor, Consumers Gas Co., Reading, Pa.
Sec.-Tr.—Geo. L. Cullen, Harrisburg Gas Co., Harrisburg, Pa.
Conv., Bellevue-Stratford Hotel, Philadelphia, Pa., April 6, 1927.

Southern Gas Association
Pres.—A. E. Merchant, New Orleans Public Service, Inc., New Orleans, La.
Sec.-Tr.—J. P. Connolly, 141 Meeting St., Charleston, S. C.
Conv., Atlanta, Ga., April 19, 20, 21, & 22, 1927.

Southwestern Public Service Association
Pres.—H. E. Borton, Mineral Wells Electric Co., Dallas, Texas.
Chairman Gas Section—C. K. Fletcher, Fort Worth Gas Co., Fort Worth, Texas.
Sec.—E. N. Willis, 403 Slaughter Bldg., Dallas, Texas.
Conv., Hotel Roosevelt, New Orleans, La., April 26-29, 1927.

Wisconsin Utilities Association
Pres.—John St. John, Madison Gas & Electric Co., Madison, Wisc.
Exec.-Sec.—J. N. Cadby, 445 Washington Bldg., Madison, Wisc.
Conv., 1927.

Geographic Divisions

Eastern States Gas Conference
Pres.—S. P. Curtis, American Gas Co., Philadelphia, Pa.
Sec.-Tr.—J. C. Smith, Consumers Gas Co., Reading, Pa.
Conv., Bellevue-Stratford Hotel, Philadelphia, Pa., April 7 & 8, 1927.

Ninth Annual Convention of the American Gas Association
Chicago, Ill. Stevens Hotel Oct. 10-14, 1927

Employment Bureau

(Address All Communications to Key Number)

SERVICES REQUIRED

WANTED by large gas company in middle west, salesman for industrial gas appliances. Address A. G. A.
Key No. 073.

WANTED—A fast growing Gas Syndicate operating a number of Gas Companies desires the services of an experienced gas appliance solicitor. Only trained and experienced men with good references need apply. A good opportunity for a live, wide-awake salesman. Address A. G. A.
Key No. 079.

SALESMEN—Large Public Utility Company operating in Central New York and many other states, desires to employ several securities salesmen to sell company securities. Excellent opportunity. State salary, age, experience, married or single. Address A. G. A.
Key No. 080.

INDUSTRIAL GAS SALES REPRESENTATIVE: Gas company in a Middle Atlantic State has an opening for a technical college graduate, with fundamental knowledge of application and combustion of various fuels, to sell gas for industrial uses. Must be capable of making plant surveys of heat applications. State age, education, experience and salary desired. Address A. G. A.
Key No. 085.

SALESMAN—Chiefly for gas-fired steam radiators, also other gas appliances to work in New York City. One acquainted with plumbing and heating trade preferred. Salary and commission basis. Address A. G. A.
Key No. 094.

A PROGRESSIVE Gas Company in Mass. has an opening in its Industrial Gas Engineering Department for a Technical College Graduate to sell gas for industrial uses. State age, education, experience, and salary desired. A fine opportunity for the right young man. Address A. G. A.
Key No. 095.

SHOP FOREMAN—Wanted by Company operating in the Metropolitan District of New York City. 25,000 Meters. Must be thoroughly familiar with all classes of work on consumers' premises, industrial appliances, routing and transportation. Give age, experience and compensation desired. References will be considered confidential if requested. Address A. G. A.
Key No. 097.

CHEMICAL ENGINEER with some experience in the manufacture of blue water gas wanted by Eastern manufacturer. In replying please give full details of experience, education, personal qualifications, availability and salary desired. Address A. G. A.
Key No. 098.

EASTERN PUBLIC UTILITY company offers unusual opportunity for a man in their trades promotional department. Prerequisites are general knowledge of gas distribution and utilization with special reference to house-piping layouts; acquaintanceship with building trades methods; must be able to interpret blue prints and execute them if necessary; must have personality which will make contacts with architects and contractors productive. Address A. G. A.
Key No. 099.

INDUSTRIAL GAS ENGINEER wanted by large gas company operating in middle west. Write, giving age, experience, and qualifications. An opportunity for the right man. Address A. G. A.
Key No. 0100.

BY LARGE CORPORATION AFFILIATED WITH THE GAS INDUSTRY—A young man with pleasing personality and knowledge of the fundamentals of gas manufacture, to make contacts with gas company officials. Large amount of traveling necessary. Address A. G. A.
Key No. 0101.

SERVICES OFFERED

WANTED—Am open for position as appliance salesman with appliance manufacturer, experience covers over fifteen years in the sale of gas ranges, automatic water heater and heating appliances, or as manager of appliance sales department with a gas operating company, experience includes executive and technical training. Married. A1 refereuces. Address A. G. A.
Key No. 205.

WANTED—Position as Gas Engineer or Superintendent of property serving 30,000 or more meters. Fifteen years' experience in high and low pressure distribution, coal and water gas production. Address A. G. A.
Key No. 211.

TECHNICAL MAN now employed as superintendent and industrial gas engineer desires new location. Thirty-six years of age. Fourteen years' experience in coal and water gas manufacture, sales and distribution. Services available upon reasonable notice to present employer. Address A. G. A.
Key No. 217.

AGGRESSIVE COMMERCIAL MANAGER—34 years of age, available October or November. Thoroughly familiar, Industrial, Commercial and Domestic Sales Promotion. Address A. G. A.
Key No. 220.

COMBUSTION SALES ENGINEER with executive ability to organize and operate an efficient industrial sales department, capable of putting over large industrial operations. Thorough knowledge of solid, liquid and gaseous fuels from a practical and theoretical standpoint, having made surveys in over one thousand industries during the past seventeen years of industrial plant engineering. Broad experience in a very extensive variety of heating operations including the design of large heating furnaces and gas burner equipment. Also contributed a great deal to the development of house-heating, able to create splendid public relations. Technical graduate. High class references. Address A. G. A.
Key No. 221.

HOME ECONOMICS UNIVERSITY GRADUATE desires a position as a Home Service Director. Has had experience in organizing and directing such a department with a Public Utility company. Address A. G. A.
Key No. 222.

ACCOUNTANT and Office Manager with wide experience in management, purchasing and all office details. Address A. G. A.
Key No. 223.

POSITION wanted as Superintendent of small gas company or as General Foreman of large plant. Approximately seventeen years' experience in all branches of manufacture and distribution, high and low pressure systems. Address A. G. A.
Key No. 224.

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AMERICAN GAS ASSOCIATION, INC.

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